

COMPANY PROFILE

LOCATIONS



- **GROUP Headquarter:** China | Macau SAR
- **Factory:**
 - China | Zhuhai
 - Taiwan | Taipei
- **R&D center:** Taiwan
- **Branch:**
 - China | Hong Kong SAR
 - China | Zhuhai
 - Taiwan | Taipei
 - Malaysia | Kuala Lumpur (Headquarter of ASEAN)
- **REPRESENTATIVE:**
 - Singapore
 - Indonesia | Jakarta

COMPANY PROFILE

YATRON

YATRON was established in 2006. The Company is a diversified organization covering Energy Management and Lighting Solutions. From energy, data center, lighting, water, transportation and health.

YATRON's technology comes from GE (General Electric) and is GE's Authorized Switchgear Panel Builder, Distributor and System Integrator. We integrate all systems and make the dream come true by intelligence.

We provide to customers, across various industries and buildings, turnkey service solutions that ensure the reliability and protection of the electrical infrastructure; from the power plant, substation, to a facility's critical equipment, and all the power technologies in between. TUV SUD's ISO 9001, ISO 14001, ISO 50001 and ERP system are always executing.



The offers of our Businesses are twofold

■ Manufacture

- LV Switchgears and Controlgears
- Energy Management System - Components and Software
- Smart and Intelligence Air Compressor and System

■ Solutions and Trade

- Data Center
- UPS and solutions
- Lighting Solutions
- Electrical and Mechanical equipment
- Construction Material

■ Investment and Management

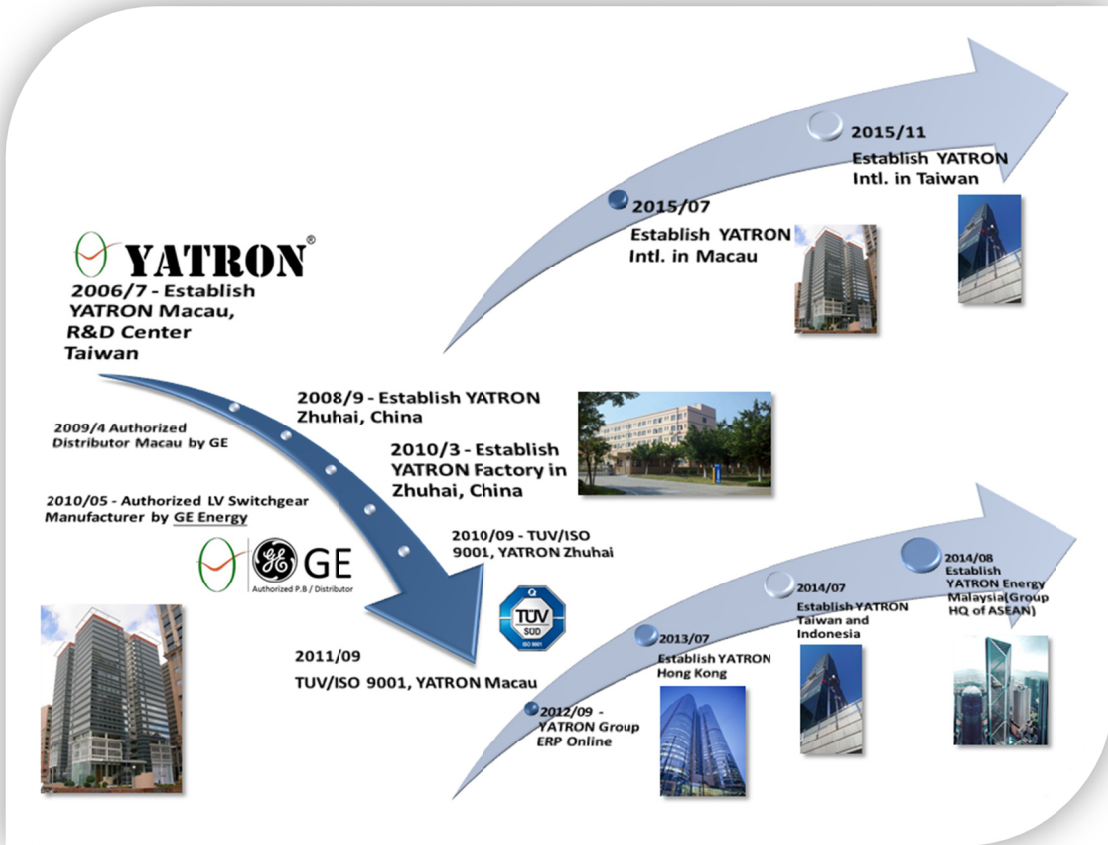
- Mega Complex building and Infrastructure
 - Mega Shopping Mall
 - Resort, Hotel, Service apartment
 - Commercial building
 - High-end residential building
 - Industrial plant, Intelligence Warehouse
 - Power plant
 - Power substation and Water plant
 - Highway, Railway and Port
 - BOT, BT
- Renewable Energy | Wind and Solar Energy
- Energy Investment Consulting Service

■ ENERGY

- Energy Consulting Service
- Energy Management System (EnMS)
- Renewable Energy
- Wind and Solar Energy System
- Electric Vehicle and Charger System
- Industrial and Building automation integration (BAS, SCADA, PLC)
- Construction and MEP Engineering
 - EPC
 - Turn-key

COMPANY PROFILE

YATRON has over TEN YEARS history in the Industrial, Commercial and Residential market



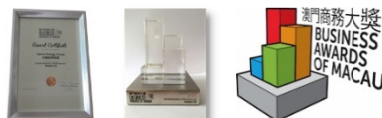
CERTIFICATES

Complies with	Certificates
ISO 9001	TUV (Germany)
IEC 62208	TUV (Germany)
IEC 60439, IEC 61439	KEMA, ASEFA, CEBC
	ASTA, TUV, IECEE
GB 7251	CCC (China)
IEC 60331	TICW
BS 6387	TICW
UL94	SGS



AWARDS

- ☐ CSR (Corporate Social Responsibility) By MIRROR POST HK 27th March, 2015
- ☐ BUSINESS AWARDS OF MACAU Environmental Performance 26th November, 2015



SCOPE OF BUSINESS



GE
Energy

YATRON® 日騰
LV Distribution System | Automation System

KenerSys

ENERGY MANAGEMENT

About Our Business



YATRON|GE Energy Management is **YATRON|GE's** electrification business. We make energy safer and more useful through our ability to transmit, distribute and convert electricity. We integrate leading products and technology to solve customer problems. Our electrical solutions allow utilities and energy-intensive industries such as commercial, healthcare, data center, oil & gas, marine, metals and mining to efficiently manage electricity from the point of generation to the point of consumption.

We offer a full range of electrical capabilities. Our global teams design industry leading technology to improve the transmission, distribution and conversion of electricity, and to help provide safe, efficient and reliable electrical power.

Global and Local

Serving the customer is our top priority. Around the globe we have established local and long-lasting relationships with customers to fulfill their needs.

Yes, our local teams can access our global operations to provide end-to-end electrical solutions to customers. Investment in people and a strong local presence helps our customers to view us as their business partner.



SCOPE OF BUSINESS

■ Explore & Interact

□ Energy Management Systems (EnMS)

Energy Management Systems

Allowing facility owners to shed some light on the unknowns of their power system, the fully integrated PMCS Energy Management System provides the tools to help control energy costs, minimize downtime and increase productivity.



← Basic → Advanced →

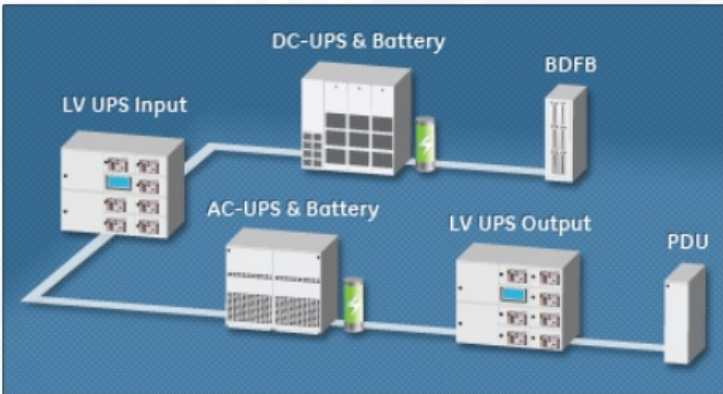
Featured Products

- Energy Management Systems**
 Complete automation solution customized to your power management needs
[View Product Info](#)
- Advanced Power Quality Metering**
 Revenue grade power quality capabilities and waveform recording
[View Product Info](#)
- Managed Ethernet Switches**
 Industrial hardened networking solutions
[View Product Info](#)




□ Total Efficiency Architecture

Total Efficiency™ Architecture

Power Electronics Total Efficiency™ Architecture
 The Total Efficiency architecture addresses issues end-to-end based on our proven experience and expertise in batteries, power distribution, DC energy systems, AC-DC power supplies, and DC-DC board mounted power to deliver a solution that is reliable and energy efficient.



Featured Products

- 
Energy Systems
 DC energy systems designed for decades of reliable service.
[View Product Info](#)
- 
DC-DC Power Converters
 Designed to provide highly reliable DC-DC conversion solutions to a wide array of applications.
[View Product Info](#)
- 
AC-DC Power Supplies
 Custom, standard and modified standard AC-DC power supplies for the data center market.
[View Product Info](#)
- Total Efficiency™ Data Center**
 Designed specifically to help you address the power, cooling and energy management challenges of datacenters. [Learn More](#)

SCOPE OF BUSINESS

■ Explore & Interact

□ Safety and Protection

Safety and Protection

Arc flashes are rare but extremely destructive events that can seriously injure employees and take your electrical system down for days. GE offers an integrated strategy that reduces the possibility of their occurrence, contain their explosive energy, and protect your personnel and your electrical system.

Arc-flash hazards

Arc-flash by the numbers

- 8 Arc-flash explosions per day
- 1-2 Deaths per day related to incidents
- 5 Types of injuries: burns, temporary blindness, hearing loss, concussion & shrapnel wounds
- \$16M Average costs for each incident

U.S. statistic cited by CapSchell, Inc. in a study for the Electric Power Research Institute, 1999

Featured Products

Arc Vault™ Protection System

A new approach to arc flash containment. It extinguishes the arcing fault in less than eight milliseconds.



Arc Flash Hazard Study

The first line of defense for your employees against an electrical arc is knowledge



Entellisys™ LV switchgear

Allows operators to stay out of the arc flash zone and lowers the incident energy of an arc flash.



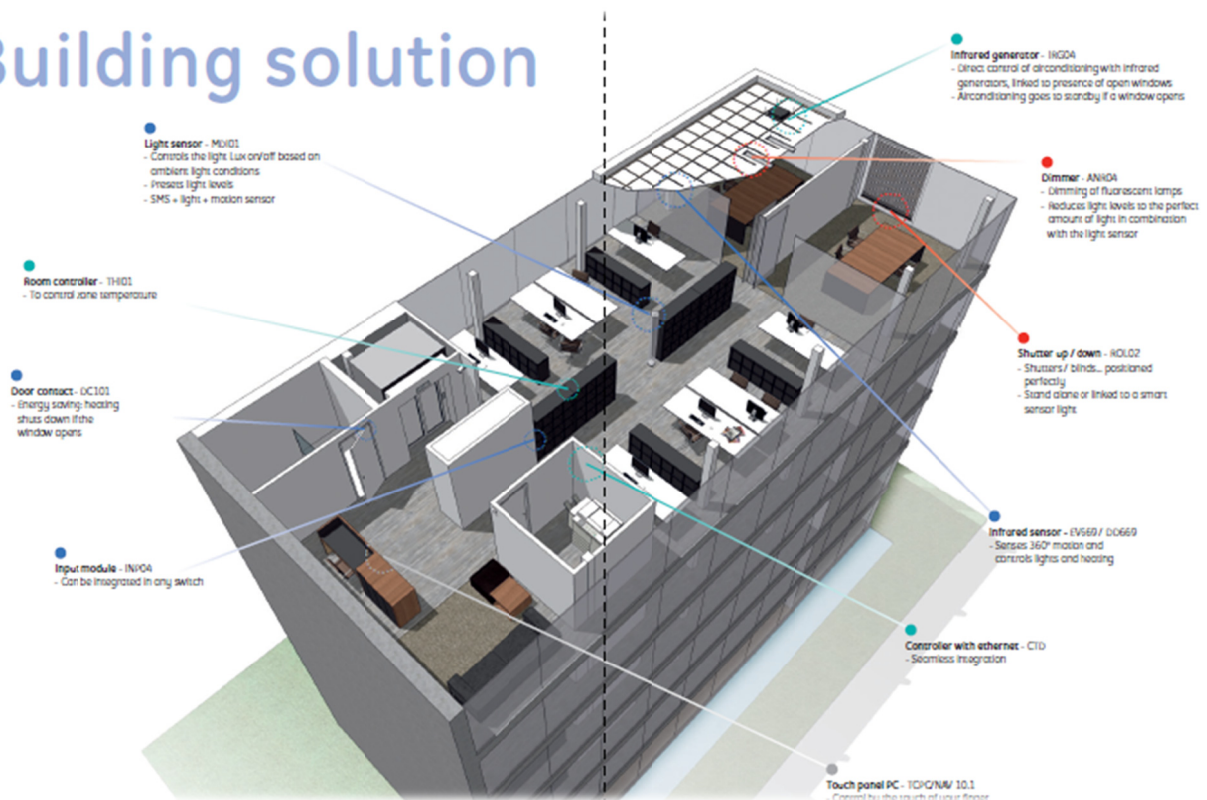
EntelliGuard™ TU Trip Unit

You never have to sacrifice selectivity for flash protection.

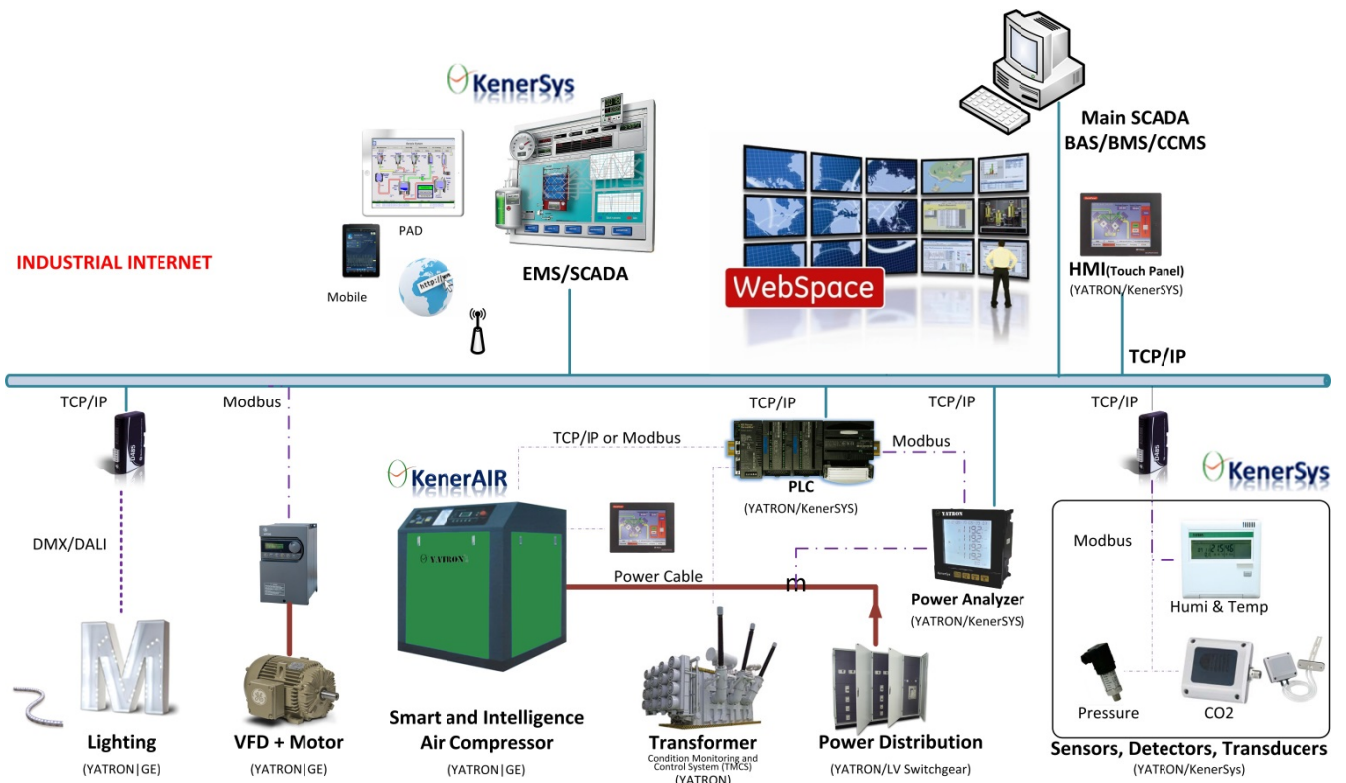


□ Factory and Building Automation

Building solution



SCHEMATIC OF SMART AND INTELLIGENCE CONTROL SYSTEM



Energy Consulting

driving the evolution of electric power systems with greater affordability, reliability, and efficiency

[About Us](#)

ISO 50001 - ENERGY MANAGEMENT SYSTEM (EnMS)

■ What is EnMS?

- Using energy efficiently helps organizations save money as well as helping to conserve resources and tackle climate change. ISO 50001 supports organizations in all sectors to use energy more efficiently, through the development of an energy management system (EnMS).
- ISO 50001, *Energy management systems – Requirements with guidance for use*, is a voluntary International Standard developed by ISO (International Organization for Standardization).
- ISO 50001 gives organizations the requirements for energy management systems (EnMS).
- ISO 50001 provides benefits for organizations large and small, in both public and private sectors, in manufacturing and service, in all regions of the world.
- ISO 50001 will establish a framework for industrial plants; commercial, institutional, and governmental facilities; and entire organizations to manage energy.
- Targeting broad applicability across national economic sectors, it is estimated that the standard could influence up to 60% of the world's energy use.
- Energy management is about managing your energy use with the goal to use less energy and use renewable energy. This might include reducing the amount of energy you use during peak hours, typically weekdays between 12PM-6PM, and it might mean shifting to clean energy sources such as solar power to supply your energy needs.



From www.iso.org in www.youtube.com

■ Why is Energy management important?

Managing your energy better can save you money, and it can also have a bigger impact on helping the environment.

■ How can I better manage my ENERGY?

An important first step to energy management is to understand how much you use. Use our **KenerSys** Power analyzer with voltage, ampere, kWh, power factor, harmonic and metering functions, you can see your daily energy use by the minutes and hour to better understand when you are using the most energy each day, month, season and the pass historical data. This BIG DATA information can help you determine what steps you can take: upgrading equipment, adjust the production process, switching to a better rate plan, stopping air leaks, or other actions.

ISO 50001 - ENERGY MANAGEMENT SYSTEM (EnMS)

WHAT WILL KenerSys EnMS DO?

□ KenerSys EnMS will provide public and private sector organizations with management strategies to increase energy efficiency reduce costs and improve energy performance.

THE STANDARD IS INTENDED TO ACCOMPLISH THE FOLLOWING:

□ Assist organizations in making better use of their **existing energy consuming** assets.

- Create transparency and facilitate communication on the **Management of energy resources**.
- **Promote energy management** best practices and reinforce good energy management behaviors.
 - Assist facilities in evaluating and prioritizing the implementation of new energy efficient technologies.
 - Provide a framework for **promoting energy efficiency** throughout the supply chain.
 - **Facilitate energy management improvements** for greenhouse gas emission reduction projects.
 - Allow **integration** with other organizational management systems such as environmental, and health and safety (ISO 9001, ISO 18000, ISO 14000).

BENEFITS OF YATRON ENERGY

■ Sustainability

Real-Time Insight for Reducing Consumption

■ Benefits of KenerSys EnMS

- Recording the BIG DATA and analysis by our system and experts in the world.
- Improved operational efficiencies.
- Decreased energy consumption.
- Energy data for fact based decisions.
- Positioning for carbon accounting.

■ Who is GE?

General Electric

- Top 1st Largest Energy firm in the world
- Top 20th Largest firm in the world



■ Who is ITRI Taiwan?

Industrial Technology Research Institute from Taiwan Government

- A nonprofit R&D organization engaging in applied research and technical services.
- Founded in 1973, ITRI has been dedicated to helping industries stay competitive and sustainable.
- ITRI has cultivated more than 140 CEOs and incubated over 260 innovative companies, including well-known names such as UMC and TSMC. ITRI focuses on the fields of Smart Living, Quality Health, and Sustainable Environment.
- 6,000 R&D employees.
- 400 R&D employees in Green Energy** and Environment Research Laboratories.
- Top ONE** Technical and R&D Center in Taiwan.



■ What is the relationship between YATRON, GE and ITRI?

- Technical cooperation, **Technical Transfer** and support from **GE** and **ITRI**.
- Big data analysis and system improvement support.

■ Benefits of YATRON Energy

- Intelligence Professional System.
- Technical transfer and support of Energy Management System from GE and ITRI Taiwan globally.
- Technical transfer and support of Renewable Energy such as Wind and Solar from ITRI Taiwan.

BENEFITS OF YATRON ENERGY

- YATRON Energy's Technical and Service team in **Greater China** and **ASEAN**
 - **R&D Center in Taiwan:** High Quality R&D and production team.
 - **EnMS products are made in Taiwan:** High Quality with competitive cost.
 - **Key management** of Group in Taiwan, Macau, Hong Kong, Taiwan, China and Malaysia: **Best service for Greater China.**
 - Headquarter of ASEAN in Kuala Lumpur of Malaysia, middle of ASEAN: **Best service for ASEAN.**
 - Branch Company and Service Center cover each region: Fast response time.
 - **Complex background:** Strong team background and experience about Owner, Consultancy, Contractor, Manufacturer and System integrator (SI) in order that we are well known all parties' mindset and requirement.
- Reduced usage of utility inputs such as electricity, heat, gas or water.
- Better decision making, based on detailed, actionable insight into resource consumption.
- Faster response to unusual usage events or patterns.
- Ability to immediately measure the effectiveness of improvement initiatives.
- Simplified data consolidation – **one platform** for integrating manual and automatic data collection.
- Ease of use, with one source for objective resource consumption data – accessible to all stakeholders.

■ Features

- Base on ISO 50001 Energy Management System (EnMS)
- Easy browse and access by **laptop, mobile** and **PAD** anywhere through internet.
- One framework - for all types of sustainability measures, including electricity, water, energy, gas, steam, etc.
- Open architecture - Integrates with existing traditional metering, automation, smart meters and systems.
- Ease of adoption - Based on tools commonly used in line side systems and by engineering, maintenance and continuous improvement teams.
- Bottoms-up data collection - Drives insight at the machine or process level, while serving data for area, building, plant or enterprise views.
- Flexibility - install as an independent system and/or embed tools right inline side systems.
- Accessibility - Enable users to access over the web or from fixed terminals.

■ High Efficiency and High Quality of EnMS

- Energy saving up to 50%.
- Money saving up to 50%.
- ROI (Return On Investment) from **1 to 3 years.**

■ Earlier you establish EnMS

- As early you save one more day...
- To earn more money \$\$\$.....



BENEFITS FOR END USERS

■ How Big Are Your Reduction Opportunities?

Energy saving up to **50%** of electricity, **50%** of water and gas. These are the kinds of reductions our customers achieve when they build a bottoms-up view of consumption and cost. Understanding and affecting the true drivers of energy and water usage takes a deep, detailed view of your operation.

YATRON KenerSys is a set of sustainability software solutions that unlocks data in existing automation and systems, as well as meters and sensors making it available to support both usage analysis and the process or equipment tuning that eliminates excessive usage.

□ Real-Time Insight Empowers Operators, Technicians, and Management

Reducing resource consumption is more than a matter of equipment troubleshooting and maintenance. Engaging operators to do their part to spot and correct problems requires giving them intuitive visibility into the areas they can directly control. Embedding that insight into their work environment makes a disciplined approach to managing energy and water usage a natural part of their responsibilities, and empowers them to drive savings as events occur.

□ A Foundation for Deeper Analytics Leveraging the Suite

As the savings from improved line side visibility and response take hold, the stage is set for additional stakeholders to drive further value recovery. Equipped with detailed, localized measurement data, as well as an understanding of the expected (or target) consumption for an area, asset or process, engineering and maintenance teams can quickly identify unusual events or patterns that indicate the need for asset or process troubleshooting.

When complex processes or equipment present analytical challenges, powerful software tools such as Troubleshooter can be applied to ensure an accurate understanding of the root causes of over consumption. Cause+ software can then leverage the results of analysis in Troubleshooter embedding preventative and or/corrective logic or guidance right into operator and supervisory consoles.

□ Easy Consolidation of Data From Disparate Sources and Systems

Consolidating all of your data sources into one central application, KenerSys enables easy data correlation for better and faster decision-making.

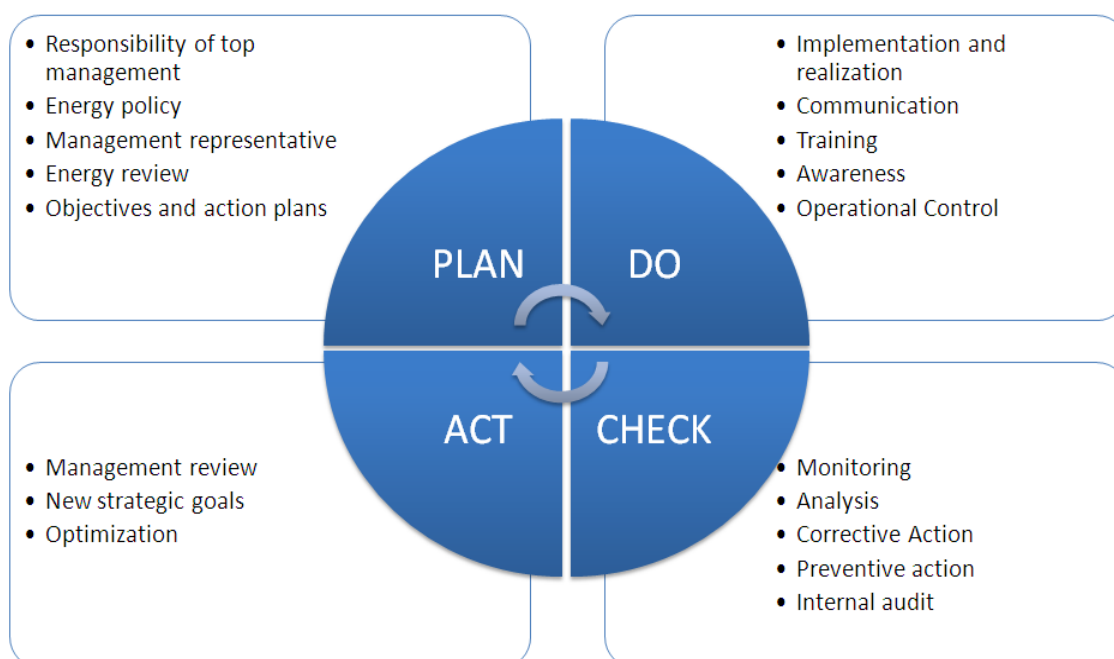
In addition, the user interface provides dynamic screens, interactive graphics, and powerful trending.

□ Identify opportunities to save energy, measure impact, and track ongoing progress

ACTIONS

■ What will YATRON Energy do?

- YATRON is based on the Plan - Do - Check - Act (PDCA) of ISO 50001 continual improvement framework and incorporates energy management into everyday organizational practices, as illustrated in below Figure-EnMS Model, which is from ISO. The **STEP** as below...
 - **Energy consulting Service**
 - **Energy Management System(EnMS) – SETUP**
 - **Energy Management Improvement**
 - **Energy Renovation and review**
- In the context of energy management, the PDCA approach can be outlined as follows:
 - **Plan:** conduct the energy review and establish the baseline, energy performance indicators (EnPIs), objectives, targets and action plans necessary to deliver results that will improve energy performance in accordance with the organization's energy policy.
 - **Do:** implement the energy management action plans.
 - **Check:** monitor and measure processes and the key characteristics of operations that determine energy performance against the energy policy and objectives, and report the results.
 - **Act:** take actions to continually improve energy performance and the EnMS.



■ What is the step to execute EnMS?

- Establish and communicate its energy commitments and data processes.
- Ensure energy action plans are established, managed and achieved.
- Achieve energy objectives and targets.
- Provide energy awareness and training to organizational personnel.
- Use operational controls to ensure energy savings will be sustained.
- Actively monitor and measure significant energy uses, collect the BIG DATA.
- Effectively demonstrate performance improvement.
- Perform verification through audits.
- Ensure success through management review.

SOFTWARE AND INTERFACE

Software and interface

Single viewpoint for your Sustainability initiatives

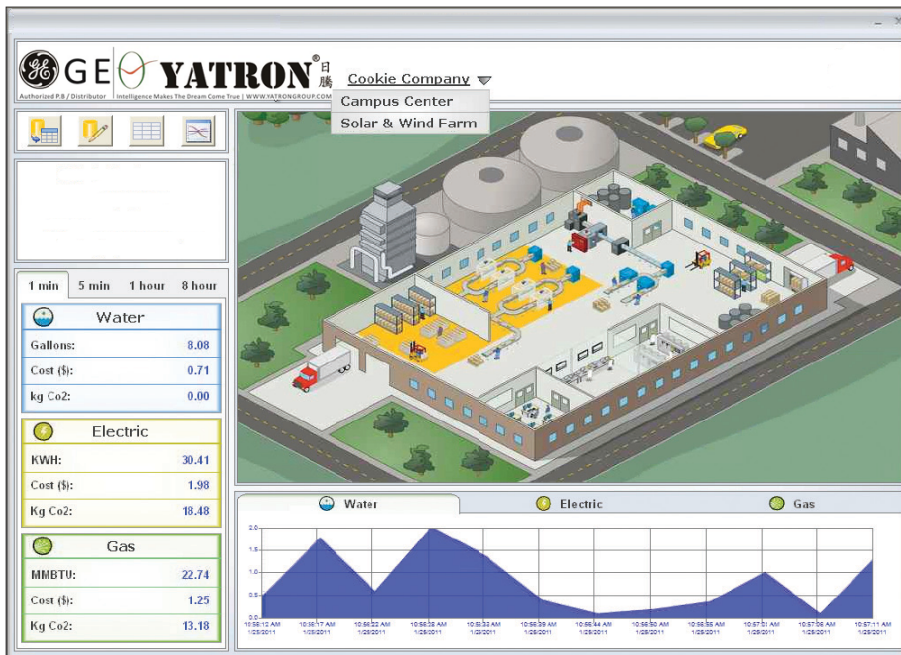
A complete view of energy, water and other utility consumption, at your fingertips.

Real-time vs. historical comparisons

Compare usage against targets for each critical input, so you can manage your usage in real time, instead of looking at utility bills after the fact.

Utilize on-the-fly analytics at the device or group levels

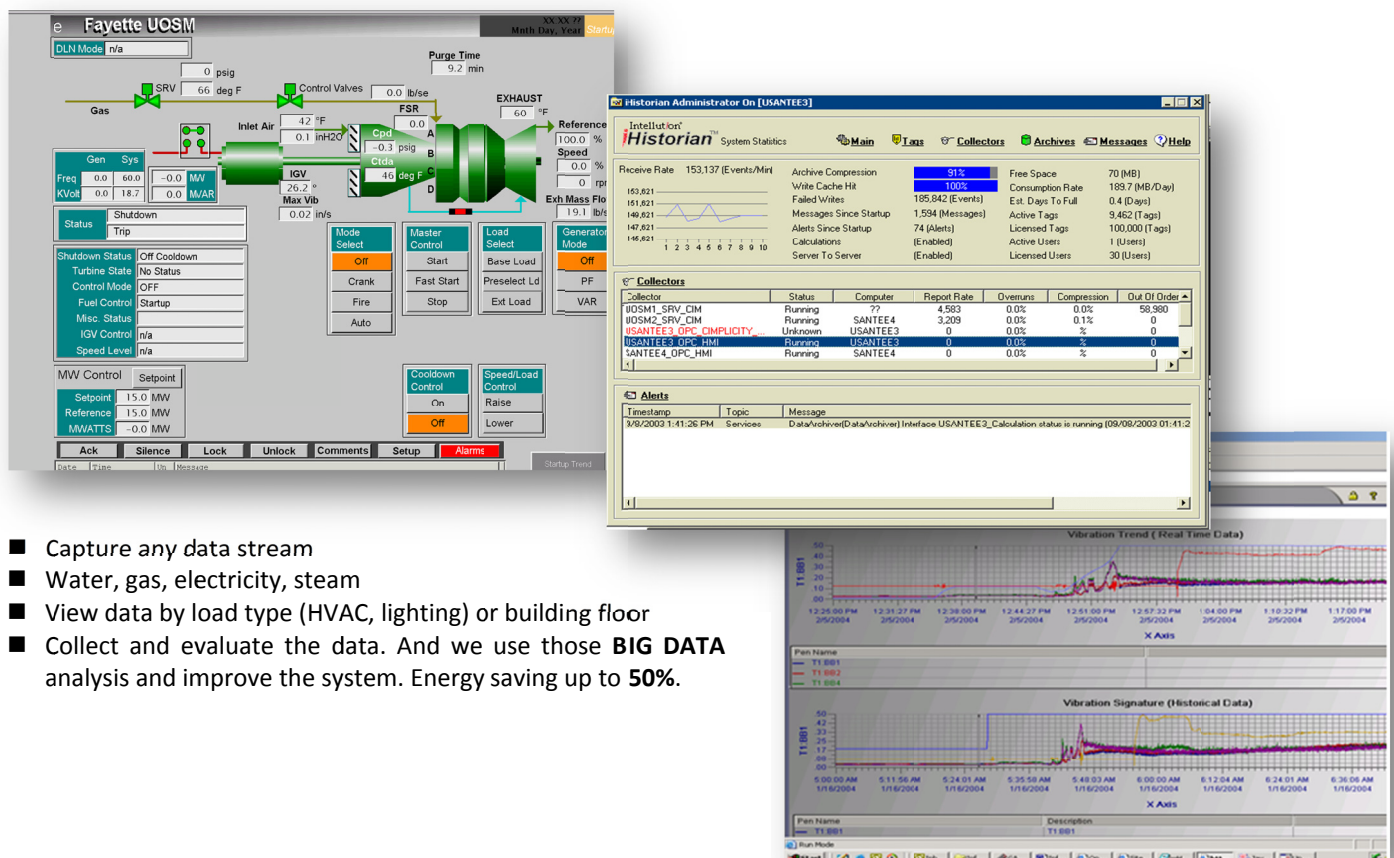
Easily "track back" through the data from a single area or meter to quickly spot unusual patterns that indicate needs to tune processes or equipment.



Leverage automatic and manual data collection methods

Contextualize raw data quickly
With a configuration wizard that includes CO2 conversion and/or cost conversion factors, you can immediately turn raw consumption figures into cost and emission figures that illustrate the value of reduction initiatives over time.

Use KenerSys out of the box or build application-specific solutions



- Capture any data stream
- Water, gas, electricity, steam
- View data by load type (HVAC, lighting) or building floor
- Collect and evaluate the data. And we use those **BIG DATA** analysis and improve the system. Energy saving up to 50%.

SOFTWARE AND INTERFACE

□ **Many Inputs, Many Stakeholders – One Platform**

□ **A Solution Based on Proven Technologies**

KenerSys is a cohesive solution that delivers focused capability in measuring and presenting data that is critical to understanding, then reducing your energy, water, and other resource usage. Our Open and Layered software approach means that you can take advantage of the core solution and easily extend and integrate its capabilities beyond the initial installation:

- Utilize an independent visualization server for web- and/or terminal services based clients
- Embed the graphical objects into live applications
- Add additional data points and calculations to screens to create additional key performance indicators or expose
 - related trends
- Take advantage of our unparalleled connectivity to gather data from otherwise isolated systems

□ **On-the-fly Historical Analysis**

Users have the flexibility to switch from real-time to historical analysis mode on the fly. This provides great insight into the and enables users to see instantly how the results compare to previous timeframes.

In addition, alarms, warnings and messages can be set up to monitor the incoming data for you and enunciate it to multiple users.

□ **A Familiar Framework**

Sustainability initiatives shouldn't depend on major investments in isolated systems that serve only a limited number of stakeholders.

KenerSys for Sustainability builds on the tools commonly used by engineering, maintenance and continuous improvement teams that turn reduction goals into realities. Our approach reduces the time and cost of adoption, and easily takes advantage of the data held in other systems your teams manage. Additionally, the KenerSys solution avoids unnecessary investment in redundant systems, while delivering deep and rich data for troubleshooting and tuning, as well as “rolled-up” views that serve management and sustainability program stakeholders.

□ **Maximize Your Access to Incentives**

Many governments and utilities around the globe offer fiscal incentives for companies that make greenhouse gas and overall energy reductions. With an increasing emphasis on proof of improvements, it's more critical than ever to be able to provide objective, trustworthy data to external stakeholders. KenerSys for Sustainability supports faster, deeper comparison of consumption patterns during different periods—simplifying the reporting needed to win, and hold, incentives.

KSPA-20 Power Analyzer

KSPA-20

DESCRIPTION

The KSPA-20 series power analyzer provide high accuracy measurement, display and communication(Modbus RTU) of all electrical and power quality parameters, including harmonic measurement THD(Total Harmonic distortion)

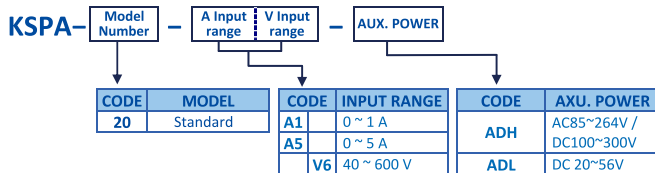
Provides electricity bill ratio (Cost) and carbon dioxide ratio (Co₂) set can show cumulative electricity bills and carbon emissions, and suitable for the installation in the power management of remote communication, such as the use of demand.

APPLICATION

Control panels and Motor, Generator monitoring
Switchgear distribution systems , Energy Management
Power quality analysis



ORDERING INFORMATION



PARAMETERS		KSPA-20	
Power Measurements	Voltage	V ₁₂ V ₂₃ V ₃₁ V _{LL,Avg} V ₁ V ₂ V ₃ V _{LN,Avg}	●
	Current	I ₁ I ₂ I ₃ I _{AVG} I _N	●
	Active Power	P ₁ P ₂ P ₃ ΣP	●
	Reactive Power	Q ₁ Q ₂ Q ₃ ΣQ	●
	Apparent Power	S ₁ S ₂ S ₃ ΣS	●
	Power factor	PF ₁ PF ₂ PF ₃ PF _{AVG}	●
	Frequency	Hz	●
	Active Energy	WH _{Total}	●
	Reactive Energy	QH _{Total}	●
	THD for voltage	THD _{V12} THD _{V23} THD _{V31} THD _{V,AVG}	●
	THD for current	THD _{I1} THD _{I2} THD _{I3} THD _{I,AVG}	●
	RS485 Port	Modbus RTU mode	●
	Cumulative electricity	Cost (Only a single rate)	●
	CO ₂ emissions	Co ²	●
	Date time	Year, Month ,Day ,Hour ,Min, Sec.	●

Accuracy & Resolutions

PARAMETERS	ACCURACY	RESOLUTION	INPUT RANGE
Voltage	0.25%	0.1%	40~600Vac(VL-N)
Current	0.25%	0.02%	1%~120% Rated
Neutral Current	1.0%	0.1%	1%~120% Rated
Active Power	0.5%	0.1%	0~9999MW
Reactive Power	0.5%	0.1%	0~9999MVar
Apparent Power	0.5%	0.1%	0~9999MVA
Power factor	0.5%	0.1%	±0.02~1.00
Frequency	0.2%	0.01Hz	45~65Hz
Active Energy	0.5%	0.1KWh	0~9999999.9KWh
Reactive Energy	0.5%	0.1KVarh	0~9999999.9KVarh
THD	1.0%	0.01%	0~100%

TECHNICAL SPECIFICATION

Input

Measurement: True rms measurement
Sampling: 128point/Cycle
Connection: 1P2W、1P3W、3P3W(2、3CT)、3P4W : Balanced/Programmable by front buttons(Actual wiring must be Voltage : 40~600 V L-N
PT Primary range : 100~500000V
PT Secondary range : 100~600V

Current : 0~5A, (Optional:0~1A)
CT Primary range : 5~10000A
Frequency : 45~65Hz
Max. Input over capability: Voltage:2 X rated continuous : 2500V, 1 sec
Current: 2 X rated continuous : 20 X rated 1 sec
Voltage : <0.2VA ; Current : <0.1VA

Input burden: Power Quality

THD: Total harmonic distortion for Voltage and Current
RS485 communication (standard)

Protocol: Modbus RTU mode
Baud rate: 1200/2400/4800/9600/19200/38400
Data bits: 8 bits
Parity: None / Even / Odd
Stop bits: 1 or 2
Address: 1~255
Wiring: 1200M max,
Termination Res.: 120~300Ω/0.25W(typical: 150Ω)
Calibration: Through RS485

Electrical safety

Dielectric Strength: AC 2KV, 50/60Hz, 1 min .Between Input / Output / Power
Surge test: 3KV, 1.2 x 50 μsec. Common mode & differential mode
Insulation Res.: ≥100M ohm, DC 500V

Isolation:

Between input / Output / Power
Input voltage terminal common ground non isolation
Input current terminal CT and external isolation

EMC: EN 55011:2002; EN 61326:2003
Safety(LVD): EN 61010-1:2001

Environmental

Operating Temp.: 0~60 °C
Operating Hum(%RH): 5~95 %RH, non-condensing
Temp. Coefficient: ≤100 PPM/°C
Storage Temperature: -10~70 °C
Enclosure: Front panel: IEC 529 (IP50) ; Housing: IP20

Power

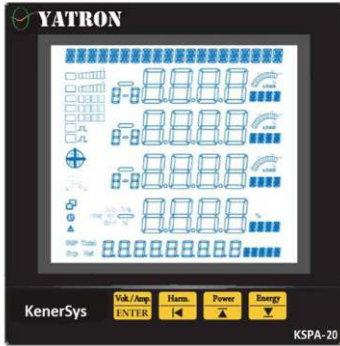
Power supply: AC 85~265V / DC 100~300V
Power consumption: AC:≤ 10W / DC:≤ 3W @ 230V
Back up memory: By EEPROM
Dimension: 96mm(W) x 96mm(H) x 71mm(D)
Panel cutout: 90mm(W) x 90mm(H)

Case material:

Black PC (non-flammable)

Installation: Panel mounting
Wiring terminal: Screw terminal, Plastic NYLON 66 (UL 94V-0)
 Current/Voltage input(#1~#10): 1.5~2.5mm²(AWG15~10)
 Other terminal: 0.5~1.3mm²(AWG22~16)
Weight: Around 400g

Front Panel



Display: LCD 65(W)x58(H)mm ; White backlight ; Blue wording
Visible under direct sunlight
Backlight on time 1~15Min ("0" is always light)
LCD LED: Upper row 20 digits: Display date, time
Reading: 8888 4 Digits x 4 rows, 10.0mm Display V, A, Power, PF, THD,..
 88888888 8 Digits x 1 row, 6.0mm Display Energy parameters(kWh, kVarh)
 □ :RS485 communication status ; 2 square status icons
 Display Master and Slave status ; Both square on for normal communication

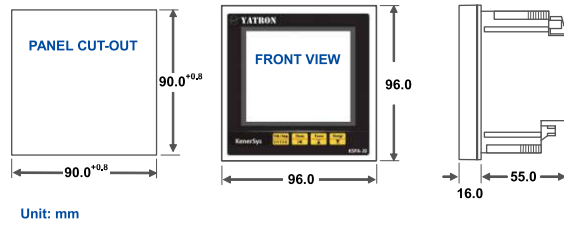
Load status indication:
 IND :On when load is inductive
 CAP :On when load is capacitive
 LOAD% :Display load percentage
 ↗ :Display load quadrant

Reading variety symbols:
 a-b, b-c, c-a :When on ,value showing Line-Line
 a, b, c : When on ,value showing in Phase
 N : When on ,value showing in Neutral
 Total : When on ,value showing Total value
 Avg : When on ,value showing Average
 MAX MIN : When on ,value showing Maximum/Minimum
 THD : When on ,value showing Total harmonics distortion
 [V][kV] [A] [kW] [MVar].. LED-16 byte display parameters Unit

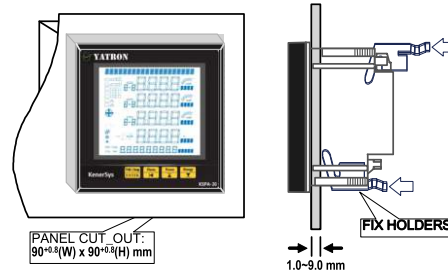
Display value update: 0.5 sec
Control button: 4 control buttons
 Enter Key / Voltage /Current display page
 Shift Key / Main electric parameters display page
 Up Key / Electric parameters display page
 Down Key / Energy parameters display page

Passwords: 4 digits passwords ; Range : 0000~9999 (Default 1000)

Dimensions

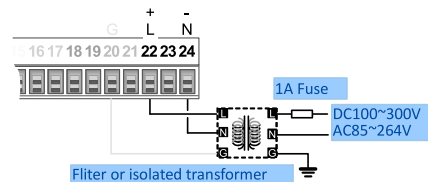


Installation



Connection diagram

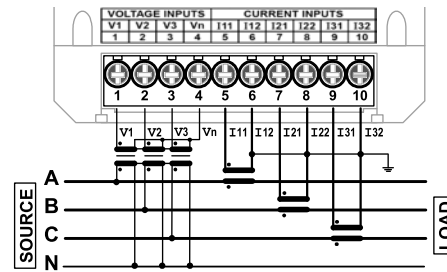
Aux Power (Terminal Block 2)



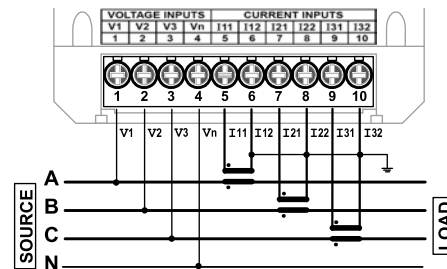
Voltage and Current input (Terminal block1)

Voltage wire: AWG16~12(1.3~2.0mm²)
 Current wire: AWG15~10(1.5~2.5mm²)

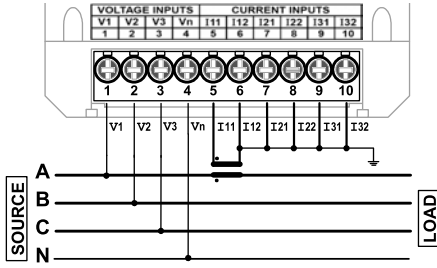
- 3Phase 4 Wire – 3PT / 3CT [Set: 3P4W]



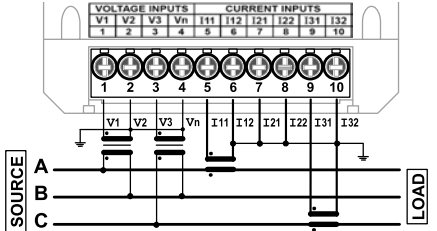
- 3 Phase 4wire – Direct Voltage (no PT) /3CT[Set:3P4W]



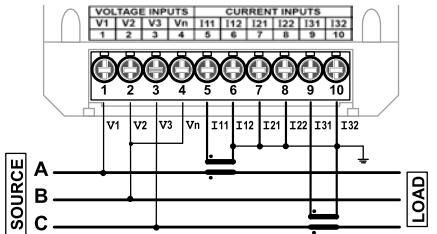
- 3 Phase 4 Wire(Balanced load) – Direct Voltage(No PT) / 1CT [Set: 3P4Wb]



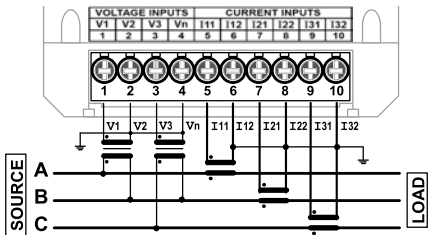
- 3 Phase 3 Wire – 2PT / 2CT [Set: 3P3W]



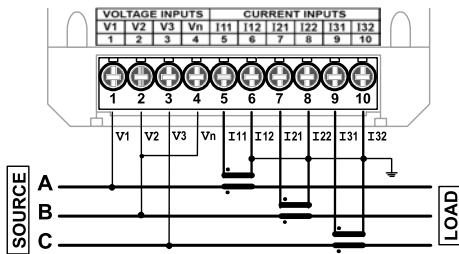
- 3 Phase 3 Wire – Direct voltage(No PT) / 2CT [Set: 3P3W3]



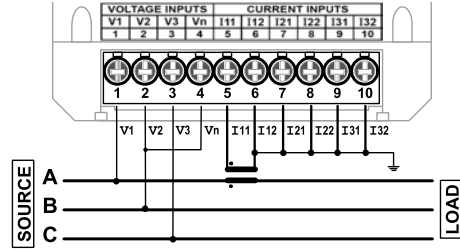
- 3 Phase 3 Wire 3CT – 2PT / 3CT [Set: 3P3W3]



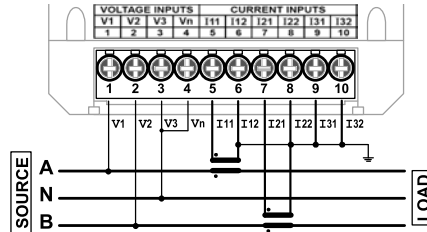
- 3 Phase 3 Wire 3CT – Direct voltage (No PT) / 3CT [Set: 3P3Wb]



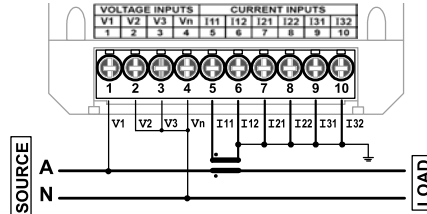
- 3 Phase 3Wire(Balanced load) – Direct Voltage (No PT) / 1CT [Set: 3P3Wb]



- 1 Phase 3 Wire – [Set: 1P3W]

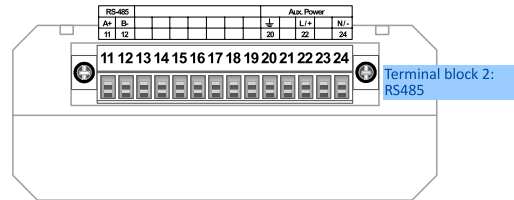


- 1 Phase 2 Wire – [Set: 1P2W]

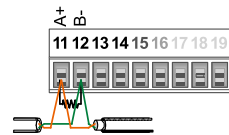


RS485 / (Terminal Block 2)

Wire diameter: AWG22~16(0.5~1.3mm²)



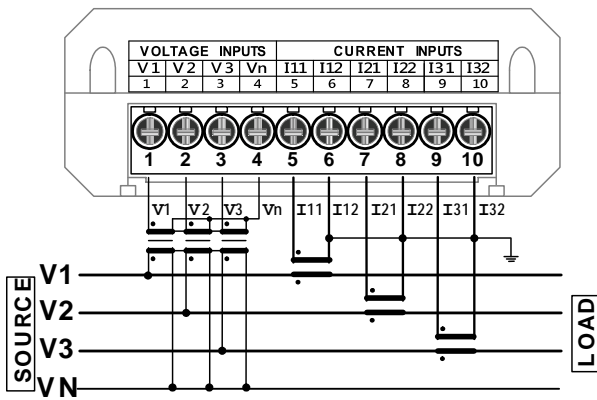
RS485 Port



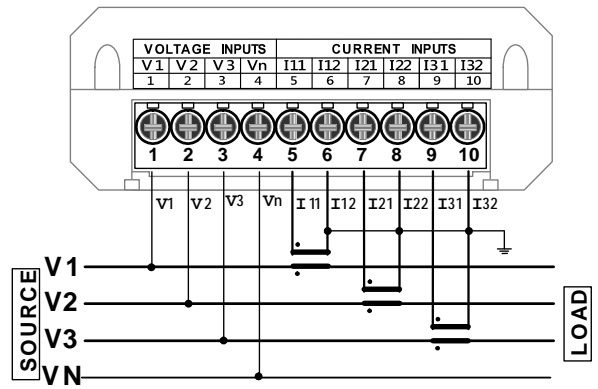
Distance Max.: 1200M
Terminator: 120~300Ω / 0.25W
(Standard: 150Ω)

三相四線

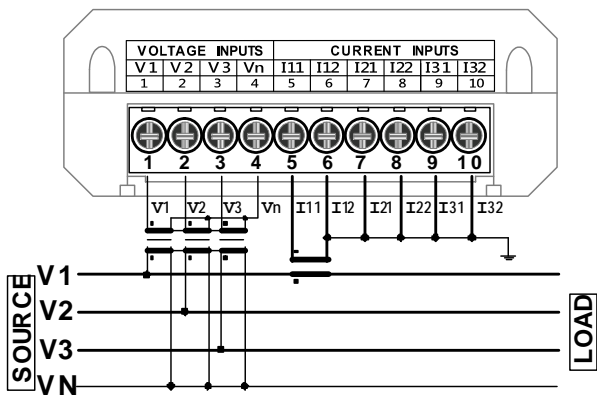
3PT/3CT



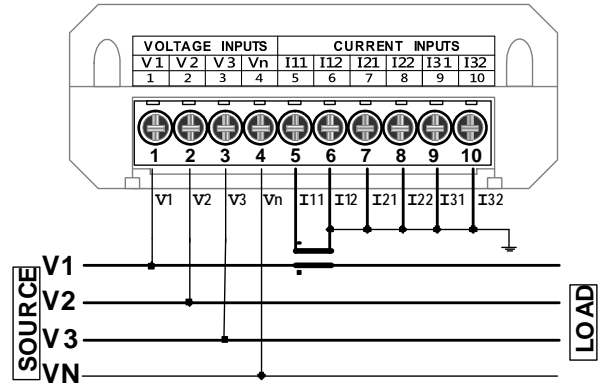
無 PT/3CT



3PT/1CT

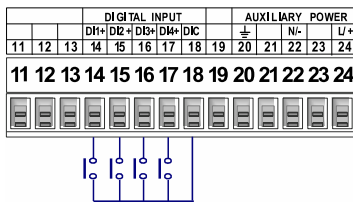


無 PT/1CT



外部控制輸入(ECI)

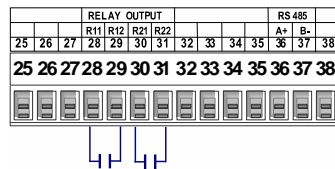
線徑: AWG22~16(0.5~1.3mm²)



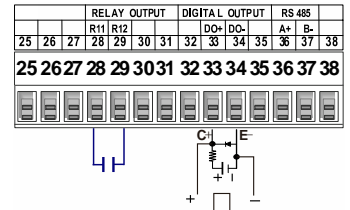
繼電器輸出(RO)/ 脈衝輸出(DO)

線徑: AWG22~16(0.5~1.3mm²)

2xRelay



1xRelay+1xDO



KSPA-80 Power Analyzer

KSPA-80

DESCRIPTION

KSPA-80 is a high level power analyzer along with advanced DSP chip, high accuracy measurement, display, networking (via RS485 & Ethernet) and wide spectrum of analysis (2~63th THD & individual harmonic readings). Provide more than 50 types energy and power quality parameters, total cost and CO₂ emission in display, diverse I/O controlling functionality (4 DI/ 4DO/ 2RO/ 2 AO), and up to 1MB embedded Flash memory for Data-Logging. It is an accurate and easy-to-use power meter in power quality controlling system nowadays.

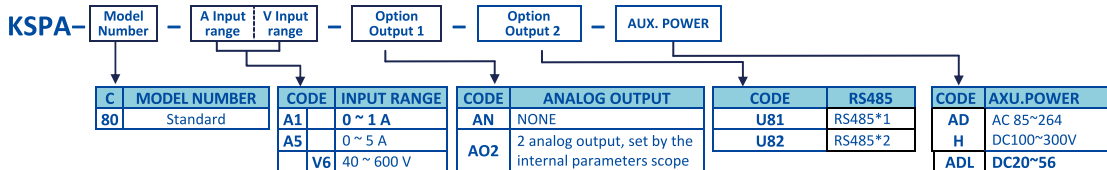


APPLICATIONS

Power Monitoring of Motor Control Switchboard
Energy Management and Electricity Cost Allocation System

Distribution Power Monitoring
Power Quality Analysis

ORDERING INFORMATION



PARAMETERS		
Power Measurements	Voltage	V ₁₂ V ₂₃ V ₃₁ V _{LL_AVG} V ₁ V ₂ V ₃ V _{LN_AVG}
	Current	I ₁ I ₂ I ₃ I _{AVG} I _N
	Active Power	P ₁ P ₂ P ₃ ΣP
	Reactive Power	Q ₁ Q ₂ Q ₃ ΣQ
	Apparent Power	S ₁ S ₂ S ₃ ΣS
	Power Factor	PF ₁ PF ₂ PF ₃ PF _{AVG}
	Frequency	Hz
	Active Energy	WH Imp WH Exp WH Total WH Net
	Reactive Energy	QH Imp QH Exp QH Total QH Net
	THD for Voltage	THD _{V12} THD _{V23} THD _{V31} THD _{V_AVG}
	THD for Current	THD _{I1} THD _{I2} THD _{I3} THD _{I_AVG}
	Individual	2nd~63th
	Max/Mini	Recording Max & Min. of each parameter with time stamp
	External control	ECI1 ECI 2 ECI 3 ECI 4
	Pulse output	PO1 PO2
Relay Output	RO1 RO2 RO3 RO4	
Analog output	AO1 AO2 23322026 (Optional)	
RS485 Port	Modbus RTU mode x 2(The 2 nd RS485 is optional)	
Date Time	Year, Month, Date, Hour, Minute, Second	

Accuracy & Resolutions

PARAMETERS	ACCURACY	RESOLUTION	INPUT RANGE
Voltage	0.1%	0.1%	40~347Vac(V _{1-N})
Current	0.1%	0.02%	1%~120% rated
Neutral Current	1.0%	0.1%	1%~120% reated
Active Power	0.25%	0.1%	0~9999MW
Reactive Power	0.25%	0.1%	0~9999MVar
Apparent Power	0.25%	0.1%	0~9999MVA
Power Factor	0.5%	0.001	±0.02~1.000
Frequency	0.2%	0.01Hz	45~65Hz
Active Energy	0.25%	0.1KWh	0~9999999.9KWh
Reactive Energy	0.25%	0.1KVarh	0~9999999.9KVarh
THD	1.0%	0.01%	0~100%
Individual Harmonic	1.0%	0.01%	0~100%
Un-balance	0.5%	0.1%	0~300%

TECHNICAL SPECIFICATION

Input

Measurement:

True-RMS measuring Parameter
Demand current for each phase and three-phase
Demand active power,three-phase total
Demand apparent power,three-phase total

Sampling rate:

256 point/Cycle

Phase & Wiring:

1P2W, 1P3W, 3P3W(1, 2, 3CT), 3P4W(1,3CT) ;

Input Range:

Balance/Unbalance System
Programmed by front keys (must be the same with rea
Voltage:40~347 V L-N ;70~600VL-L
PT ratio(primary) programmable: 100~500000V
PT ratio(secondary) programmable:100~600V
Current: 5A, (Optional:0~1A)
CT ratio(primary) programmable: 5~10000A
Frequency: 45~65Hz

Max. Input Withstand:

Relay output contact:

4 relay: FORM-A, 3A/250Vac, 3A/30Vdc, Common Mode

Relay mode:

Hi/ Lo/ Hi. hold/ Lo. hold/ do

Function:

Corresponding to 30 types power and demand
V/I/P/Q/S/PF/Hz/THD/Hamonic/Unb/Phase.....

Analogue Output(AO)

Analogue Output:

(Option)

Option : 2 relay

Output range:

Voltage: 0~5V / 0~10V
Current: 0~20mA / 4~20mA / 0~10mA
/4~12~20 mA

Accuracy:

±0.1% of F.S.; 16 bits DA converter

Ripple:

±0.1% of F.S.

Response time:

≤100 m-sec. (10~90% of input)

Isolation:

AC 2500V between input and output

External Control Inputs(ECI)

Input mode:

4 ECI points, Contact or open collect input, Level trigger

Functions:

Reset for Totalizer / Reset Max or Mini. Hold

/ Reset for Relay Energized latch / DI
Settable range 5 ~255 x (8m seconds)

Debouncing time:

Pulse output (PO)

Output mode:

2 Open collect (O.C.)outputs: 5~30Vdc, 30mA(max)

Reaction time:

≤ 300ms

Isolation:

2500Vac

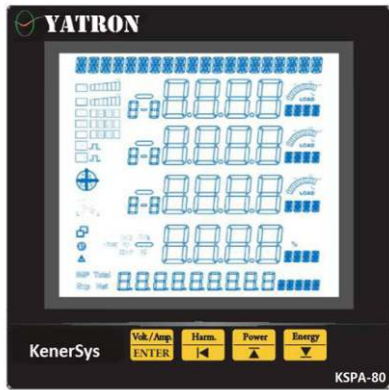
RS485 communication (The second set of features is optional)

Output port:	2 ports to meet the needs of man-machine interface and central monitoring
Protocol:	Modbus RTU mode
Address:	1~255
Baud rate:	1200/2400/4800/9600/19200/38400
Parity:	None / Even / Odd
Data bits:	8 bits
Stop bits:	1 or 2
Wiring:	1200M max,
Terminal Resistance:	120~300Ω/0.25W(typical: 150Ω)
Environmental	
Operation Temp.:	0~60 °C / Display 0~50 °C
Operation Humidity:	5~95 %RH, Non-condensing
Temp. Coefficient:	≤100 PPM/°C
Storage Temperature:	-10~70 °C
Enclosure:	Front panel: IEC 529 (IP50) ; Housing: IP20
Power	
Power supply:	AC 85~264V / DC 100~300V
Power consumption:	AC:≤ 10VA @ 230V / DC:≤ 3W
Back up memory:	By EEPROM

Mechanical

Dimension:	96mm(W) x 96mm(H) x83mm(D)
Panel cutout:	90mm(W) x 90mm(H)
Case material:	Black ABS (Add retardant)
Mounting:	Panel flush mounting
Electrical safety	
Dielectric Strength:	AC 2KV, 50/60Hz, 1 min. ; Between Input / Output / Power / Case 3KV, 1.2 x 50 μsec. Common mode & differential mode
Surge test:	≥100M ohm, DC 500V
Insulating Resistance:	Between Input / Output / Power /
Isolation:	<u>EN 55011:2002; EN 61326:2003; EN 61010-1:2001</u> <u>IEC 61000-4-2; IEC 61000-4-3; IEC 61000-4-4,</u> <u>IEC 61000-4-5; IEC 61000-3-2</u>
Standard:	
Terminal Block:	
	Screw terminal, Plastic NYLON 66 (UL 94V-0) Voltage input (P1~#12): 0.2~2.5mm2(AWG28~12) Current input (P13~P18): 0.5~2.5mm2(AWG22~12) Signal input (P19~P46): 0.5~1.3mm2(AWG22~16)
Weight:	Under 400g

FRONT PANEL



Display value update:	0.5 sec
Control button:	4 control buttons
	<ul style="list-style-type: none"> Enter Key / Voltage /Current display page Shift Key / Main electric parameters display page Up Key / Electric parameters display page Down Key / Energy parameters display page
Passwords:	4 digits passwords ; Range : 0000~9999 (Default 1000)

Alarm events: The digital power analyser shall provide date and time stamped event log. The type of alarm events and size of the event log shall be user definable. The following classes of events shall be available as alarm events :

- Over / under voltage
- Over / under current
- Current or voltage unbalance
- Phase loss, voltage or current
- Over / under frequency
- Over kVA, kW or kVA into / out of load
- Under power factor, true or displacement
- OverTHD
- Over demand, current or power
- Phase reversal
- Voltage or current sag / swell

Display: LCD 65(W)x58(H)mm, blue character with white back light
LCD protection function: the period time of back light on can be set from 0~15 minutes ("0" stands forever bright)

Reading:
Upper row 20 digits: Display date, time
4 digital x 4 line, 10.0mm high for V, A, Power, Hz, PF, THD,..
88888888 9 digital x 1 line, 6.0mm high for Power parameters (kWh · kVarh)
☐ :RS485 communication status ; 2 square status icons
Display Master and Slave status ; Both square on for normal communication

Load status
IND :On when load is inductive
CAP :On when load is capacitive
LOAD% :Display load percentage
⏏ :Display load quadrant

Reading variety
1-2, 2-3,3-1 :When on ,value showing Line-Line
1, 2,3 : When on ,value showing in Phase
N : When on ,value showing in Neutral
Total : When on ,value showing Total value
Avg : When on ,value showing Average
MAX MIN : When on ,value showing Maximun/Minimum
THD : When on ,value showing Total harmonics distortion
Remark : When on · Display sub harmonic content

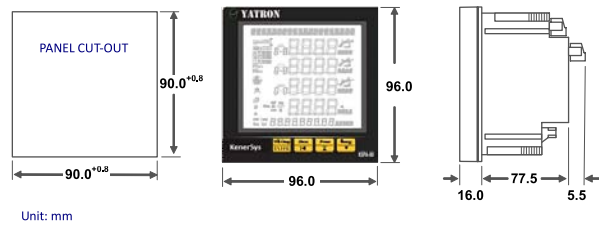
V 、 A 、 KW 、 HZ 、 ... LED-4 byte display parameters Unit

Output symbol

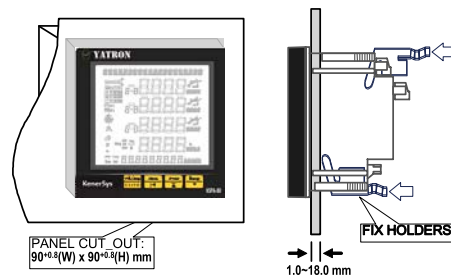
- AO1 AO2** : When on · Analog output
- DI** : When 1~4 point on · ECI signal input
- RO** : When 1~4 point on · Relay Output
- DO1 DO2** : When on · Pulse signal output (PO)

Display value 0.5 sec

Dimensions

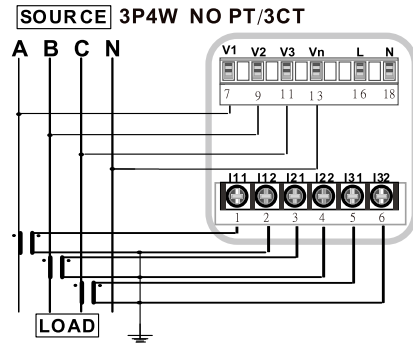
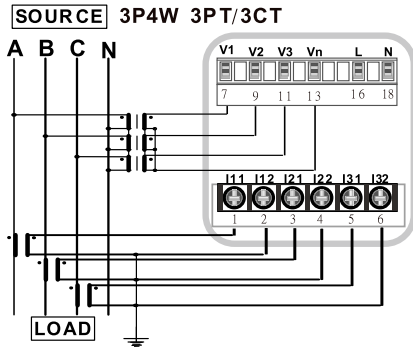


Installation

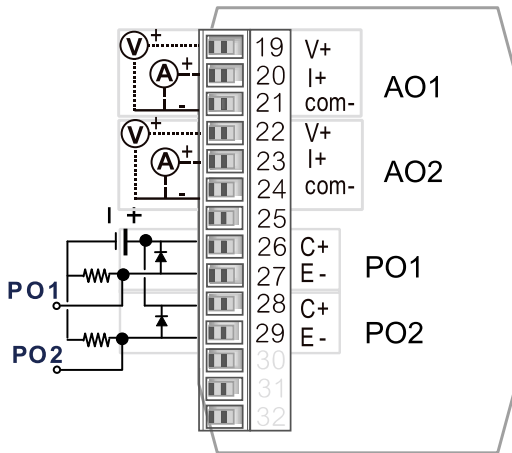


3Phase 4Wire

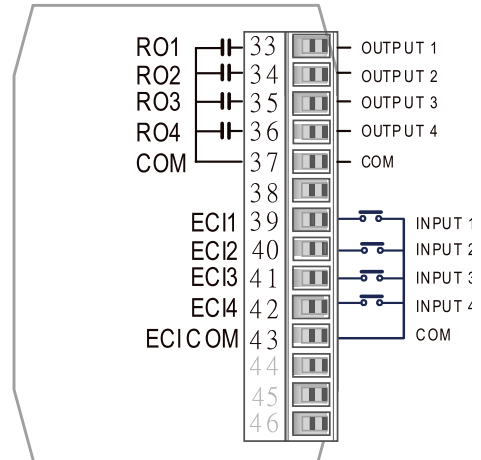
KSPA-80



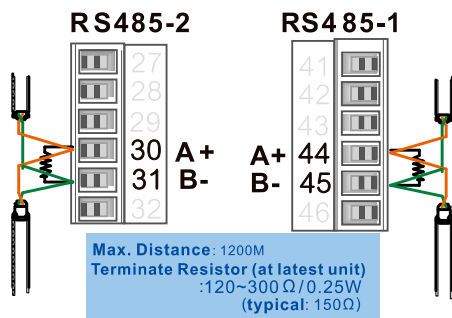
Analogue output / Digital (pulse) signal output



Relay output / Digital signal input



RS485 communication output



KSPS SWITCHING POWER SUPPLY

FEATURES

- A wide range selectable to meet various application
- 230K~300Khr. MTBF
- RoHS version in option
- Compact size with DIN rail mounting



ORDERING INFORMATION

KSPS- [Output Rating] - [Output Voltage]

CODE	OUTPUT RATING	CODE	OUTPUT VOLT
020	20 Watts	05	5V
025	25 Watts	12	12V
050 (040)	50 Watts, 5V output only 40 Watts, code: 040	24	24V
100	100 Watts	VO	Specify Voltage
150	150 Watts	Please refer to the table of power rating on right side for the capability of output current.	
300	300 Watts		
500	500 Watts		

Power Rating	5V	12V	24V
20 Watts	4A	X	X
25 Watts	X	2.08A	1.04A
50 Watts	*8.0A	4.2A	2.1A
100 Watts	X	X	4.2A
150 Watts	X	X	6.25A
300 Watts	X	X	12.5A
500 Watts	X	X	20.8A

* 50Watts 5V/8.0A output power rating of only 40Watts

TECHNICAL SPECIFICATION

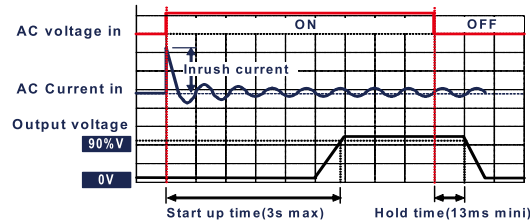
MODEL	20W	25W	50W	100W	150W	300W	500W
INPUT							
Voltage	AC 100~240V, 47~63Hz			AC 115 and 230V switchable by switch			
Efficiency (at 110V rated load)	5V	70%	--	72%	--	--	--
	12V	--	75%	75%	--	--	--
	24V	--	76%	78%	80%	76%	82%
Inrush Current	110V	20A		--	--	--	--
	220V	40A		40A	40A	40A	40A
OUTPUT							
Output indication	Green LED						
Voltage adjustment	-10% to 10% (with VR adjustment)						
Ripple (Vp-p)	5V	50mV	--	65mV	--	--	--
	12V	--	120mV	100mV	--	--	--
	24V	--	150mV	240mV	240mV	250mV	240mV
Voltage tolerance	±1.0% max., (with rated input, 0 to 100% load)						
Linearly	±1.0% max., (with rated input, 0 to 100% load)						
Load influence	±1.0% max., (with rated input, 0 to 100% load)						
Start up time	3 seconds max. (at rated input/output voltage)						
Hold time(at 110V)	13ms						
Short protection	Auto reset in standard						
ENVIRONMENTAL							
Ambient temp.	Operating: -15°C ~ 50°C; Storage: -20°C ~ 85°C						
Ambient humidity	Operating: 5 to 95 % RH; Storage: 5 to 95 % RH						
Temp. influence	0.05%/°C max.(0~50°C)						
Voltage influence	0.5% max. (at 85 to 264 VAC input, 100% load)						
Vibration resistance	10 to 500Hz, 2G, 10 min/cycle for 1 hour each in X, Y, and Z						
Shock resistance	150 m/s ² (about 50g) 3 times each in X, Y, and Z directions						
ELECTRICAL SAFETY							
Dielectric strength	AC 2.0 kV for 1 min. (between input, output and housing; detection:						
Insulation resistance	100 MΩ min. (between input, output and housing) at 500 VDC						
EMC	EN55022 Class B, EN61000-3-2, EN61000-3-3, EN55024, IEC61000-4-2, -3, -4, -5, -6, -8, -11						
MECHANICAL							
Dimensions	104(H) x35(D) x45(W)	104(H) x76(D) x45(W)	100(H) x83(D) x49(W)	100(H) x100(D) x60(W)	100(H) x100(D) x90(W)		
Housing	Self-extinguishing, black ABS, UL94V0		Aluminum				
Terminals	Screw terminal, up to 2 x 2.5mm ² wire						
Mounting	35mm DIN rail (EN50022)						
Weight	190g	210g	380g	450g	600g	820g	

DESCRIPTION OF TECHNICAL

Short protection

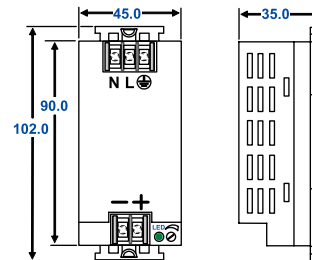
The short protection function of idea is same as over load protection with more strictly condition. That protects the power supply from possible damage by short current.

Inrush Current, Start Up Time, Output Hold Time

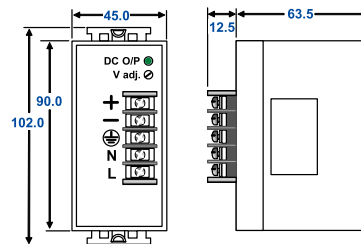


DIMENSIONS

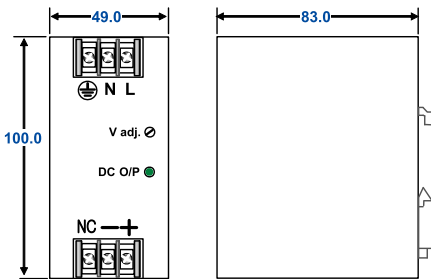
KSPS-20W/25W



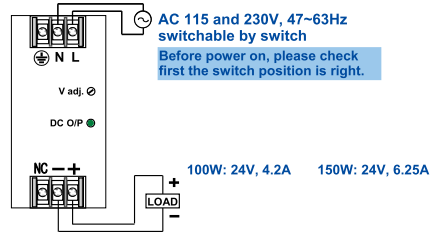
KSPS-50W



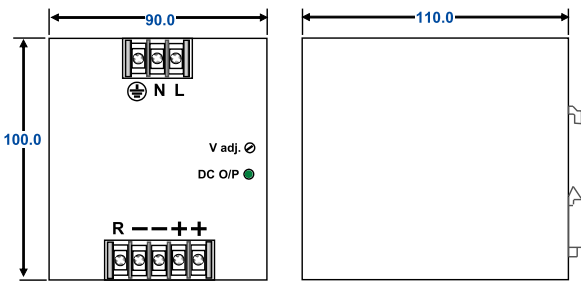
KSPS-100W/150W



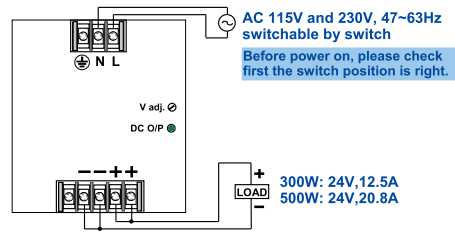
KSPS-100W/150W



KSPS-300W/500W



KSPS-300W/500W



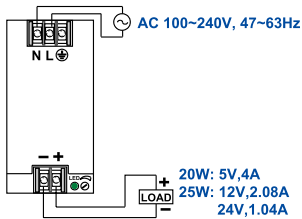
OUTPUT VOLTAGE ADJUSTMENT



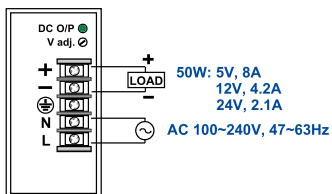
CONNECTION DIAGRAM

Please check the voltage of power supplied first, and then connect to the specified terminals. It is recommended that power supplied to the meter be protected by a fuse or circuit breaker.

KSPS-20W/25W



KSPS-50W



KSTH 2 WIRE TEMP. Transmitter WITH SENSOR

KSTH

FEATURE

- Accuracy: RTD: 0.5%, T/C: 0.75%
- Wide selection of input
- Low output ripple
- High stability & low cost



SPECIFICATION

2 - WIRE TEMP. TRANSMITTER

Input Range	Input Impedance	Output Range	Load Resistance
Type K, 0 ~ 1200°C	≥ 1M ohm	4 ~ 20 mA	≤ (Vs-12) / 20mA (ohm)
Type J, 0 ~ 1000°C	≥ 1M ohm		
Type E, 0 ~ 800°C	≥ 1M ohm		
Type T, -50 ~ 400°C	≥ 1M ohm		
Pt100Ω, -100 ~ 800°C	≥ 10M ohm		

- Accuracy:** RTD (Pt100): ±0.15% of FSO
T/C (K, J, E, T): ±0.3% of FSO
- Response time:** ≤ 300 msec.
- Span adjustment:** ≤ 10% of FSO
- Zero adjustment:** ≤ 5% of FSO
- Output ripple:** ≤ 0.3% of FSO
- Power Supply:** DC 16 ~ 36V
- Open circuit protection:** Upscale ≥ 22mA
- Operating temperature:** 0~60°C
- Operating relative humidity:** 20~95 %RH
- Temperature coefficient:** ≤ 100 PPM/°C
- Cold junction compensation:** 25±10°C, error ≤ 0.5°C
- Storage temperature:** -10~70°C
- Weight:** 50g

- Mechanical**
- Material:** Tube, Connection: St. Steel 316
Head: Aluminum case
- Tube diameter:** 3.2, 4.8, 6.4, 8.0, 9.0, 12.75 mm
- Connection:** 1/4", 3/8", 1/2" NPT or PT male
Sliding connection or Flange available
- Thermo-Well:** 1/4", 3/8", 1/2" NPT or PT male
Flange available

ADJUSTMENT

Thermocouple input: Pt100Ω input:

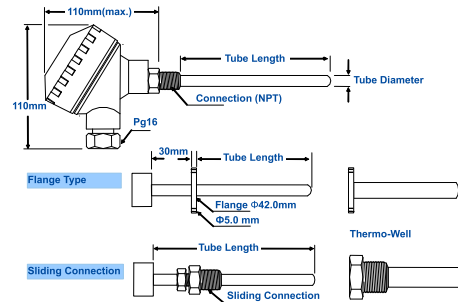
ZERO: Zero Adjust Pot (Clockwise: o/p increase)

SPAN: Span Adjust Pot (Clockwise: o/p increase)

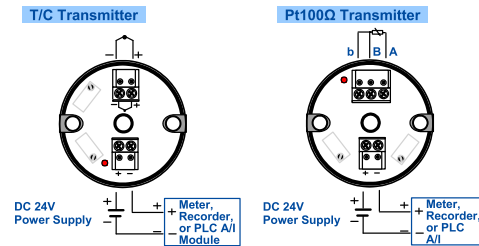
SW101 OFFSET	1	2	3	4
+150 °C	ON			
+20 °C		ON		
0 °C			ON	
-20 °C				ON

SPAN (B)	1	2	3	4
50 °C				
100 °C				ON
150 °C			ON	
200 °C				ON
250 °C	ON			
300 °C		ON		
350 °C			ON	
400 °C	ON	ON	ON	ON
450 °C	ON			
500 °C	ON			
550 °C	ON			
600 °C	ON	ON	ON	ON
650 °C	ON	ON	ON	ON
700 °C	ON	ON	ON	ON
750 °C	ON	ON	ON	ON
800 °C	ON	ON	ON	ON

DIMENSIONS



CONNECTION DIAGRAM



ORDER INFORMATION

RTD		THERMOCOUPLE					TEMPERATURE RANGE		LENGTH		DIAMETER		CONNECTION		THERMO-WELL																			
P	K	J	E	T	A	B	C	D	E	F	G	H	I	J	K	O	N2	N3	N4	P2	P3	P4	G2	G3	G4	S2	S3	S4	F4	N	O			
•				•						03	30 mm	3	3.2 mm	N2	1/4" NPT	N2	1/4" NPT																	
	•									04	40 mm	4	4.8 mm	N3	3/8" NPT	N3	3/8" NPT																	
		•								05	50 mm	6	6.4 mm	N4	1/2" NPT	N4	1/2" NPT																	
			•							06	60 mm	8	8.0 mm	P2	1/4" PT	P2	1/4" PT																	
				•						08	80 mm	9	9.0 mm	P3	3/8" PT	P3	3/8" PT																	
					•					10	100 mm	C	12.75	P4	1/2" PT	P4	1/2" PT																	
						•				12	120 mm	O	Specify	G2	1/4" PF	G2	1/4" PF																	
							•			15	150 mm			G3	3/8" PF	G3	3/8" PF																	
								•		20	200 mm			G4	1/2" PF	G4	1/2" PF																	
									•	25	250 mm			S2	1/4" NPT																			
										30	300 mm			S3	3/8" NPT																			
										40	400 mm			S4	1/2" NPT																			
										O	Specify			F4	Ø42mm Flange																			
														N	None																			
														O	Specify																			

KSCO1 Carbon Monoxide CO Transmitter (Indoor use)

■ Features

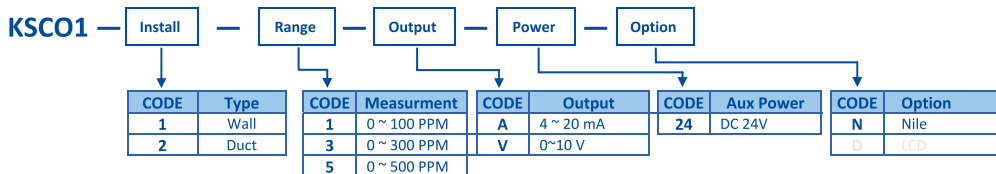
Long life span, Electrochemistry sensing theory, low gas interference,
External sensor increase accuracy and CO acuity,
High Stability, linear output.

■ Applications

HVAC air-con system \ Instrument equipment/Environment monitoring and
system control, Car Park/Green house ,farm etc
(Product use only in environmental monitoring control)



■ Product code



■ Specifications

Sensor : Electrochemistry CO sensor
Input : Specify
Range : 0~500PPM
Output : 0~10V OR 4~20mA
Accuracy : ±3 % F.S
Acuity : < ±10ppm
Load Resistance : Output 4~20mA · ≤ 500Ω ;
Output 0~10V · ≥ 10KΩ ;
Response Time : 60 sec (Diffusion time)
Wiring : 3 Wire type
Measuring medium : Non-invasive gas · In HVAC (Air-con \ ventilation) systems.
Zero and span setting : Adjustable range 10 %
Medium temperature range : 0~50°C
Zero Basis : < 10ppm

Temperature

Working Temperature : 0 ~ 50°C
Humidity : 5 ~ 95 %RH,(Non-condensing)
Storage : -10 ~ 60°C

Power

Auxiliary : DC 24V±10%
Power Consumption : < 40mA ; Display < 80mA
Operating Current : > 0.6A
Electric connection : 3P Terminal and M16 head fastener

Installation

Type : Wall Mount / Duct
Protection Class : Body IP64 / Sensor:IP20
Electric Protection : Over Voltage / Reverse wire

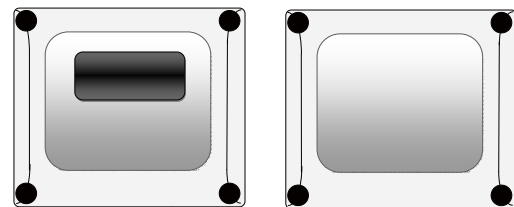
Hardware

Dimension : Body : 80mm(W) x 80mm(L) x 38mm(H)
Case : PC non-flammable
Weight : Wall Mount:165g / Duct:210g
Mounting : Base screw mount

Display panel(LCD Type only)

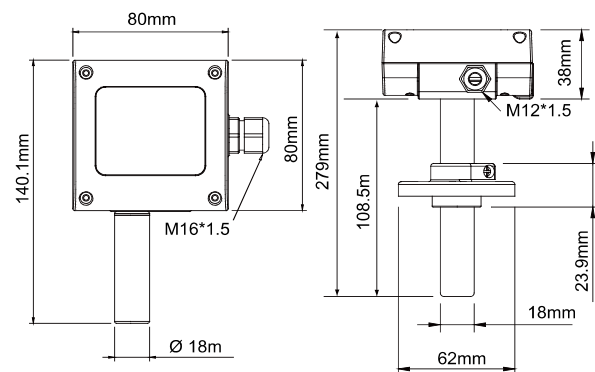
Display type: LCD module and backlight
Display range: According to specify range, single row digit
Digits Height: 5.56mm

■ Front Panel

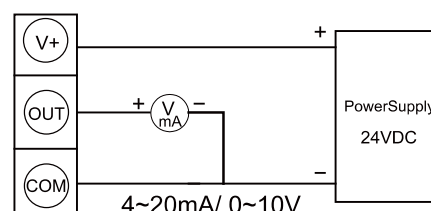


Measuring Input

■ Dimension



■ Wiring diagram



KSCO2 CO₂ Concentration Transmitter

FEATURES

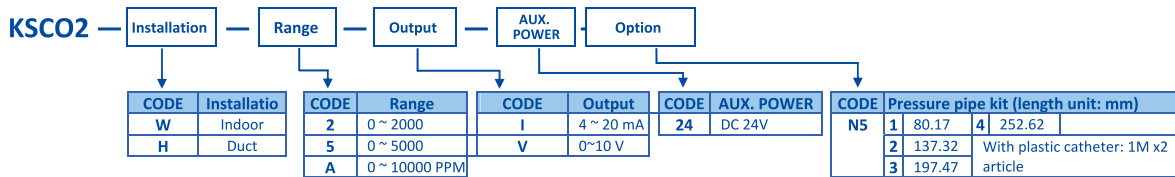
The KSCO₂ - carbon dioxide level is recently regarded as an important parameter that substantially determines the quality of the interior climate. With the CO₂ Concentration Transmitter, people can optimize the ventilation for creation of a healthy interior climate, and agriculturist can make the plants grow faster and healthier

APPLICATION

- Building HVAC management
- climate technology
- Schools, universities
- weather stations
- Environmental Control and Monitoring System
- meeting rooms, hospitals, cinemas, theatres
- parking lot/ greenhouse/ warehouse



ORDERING INFORMATION



TECHNICAL SPECIFICATION

Sensing signal: NDIR infrared non-distributed sensor
Measurement range: 2000 / 5000 / 10000 PPM
Operating range: 2000 / 5000 / 10000 PPM
Output signal: 0~10V or 4~20mA
Accuracy: ±30ppm±3 %
Sensitivity: ±20ppm±1 %
Load impedance: Output: 4~20mA · ≤ 500Ω ; Output: 0~10V · ≥ 10KΩ ;
Reaction time: Wall Mount : 20 sec Diffusion time Duct Type : @ 2 m/s wind speed · < 15 min ·
Measuring medium: Non-eroding gas in HVAC systems.
Zero and span adjustment: Zero & Span 10 %
Medium temperature: 0~50°C
Wiring: Three-wire
Zero point error: ±30ppm/10K
Range of measurement error: ±30ppm/10K

Working environment

Operating Temperature: 0 ~ 50°C
Relative humidity: 0 ~ 95 %RH, Non-condensing
Storage Temperature: -30 ~ 70°C

Power supply

Power Supply: DC 24V±10%
Power consumption: < 70mA
Start-up current: > 0.6A
Electrical connection: M12 Quick Connect seat

Mounting

Hosing classification: Wall-mounted / Duct type
Electrical protection: Wall-mounted type: IP54 / Duct type: IP64
 Over voltage/Reverse power protection

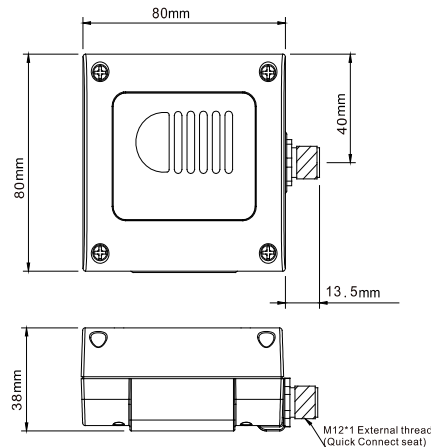
Mechanical

Dimensions: Main : 80mm(W) x 80mm(H) x 38mm(D)
Housing material: Flame retardant ABS
Probe material: Flame retardant ABS
Weight: Wall-mounted : 140g
Fixed: Wall - mounted: screw on
 Duct-mounted: Flange mounting

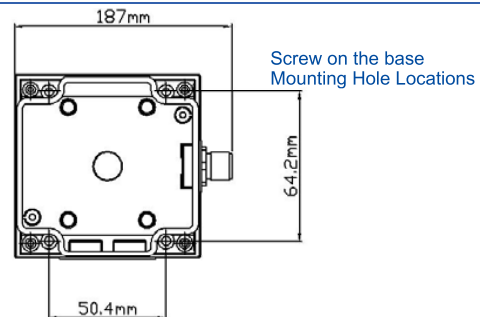
Optional Accessories

Probe length, N51~N54, for Duct-mounted kit

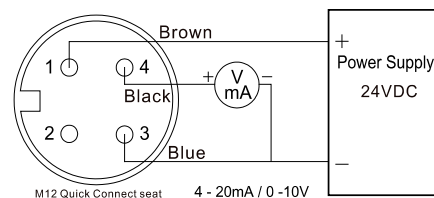
FRONT PANEL



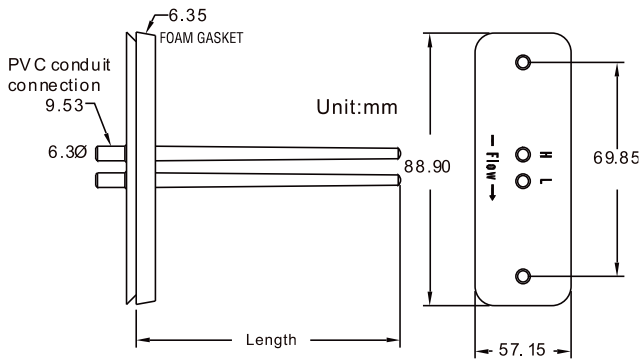
DIMENSIONS



CONNECTION DIAGRAM

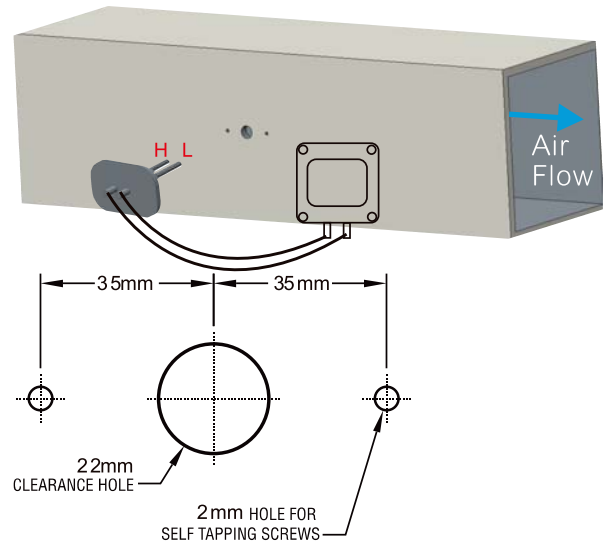


■ PROBE DIMENSION



Model	Probe Lengths	Unit (mm)
N-51	80.17	6.3 \varnothing transparent probe length is H 1M / L 1M. Total Length is 2M.
N-52	137.32	
N-53	195.47	
N-54	252.62	

■ PROBE CUT-OUT DIMENSION



tube diameter: $\varnothing 22\text{mm}$; screw diameter $\varnothing 2\text{mm}$

KSFS Paddle Wheel Flow Sensor

KSFS

DESCRIPTION

KSFS - Paddle Wheel Flow Sensor · Using SUS and corrosion-resistant materials and design oxidation resistance, good stability and high resolution built-magnet rotor, NPN pulse square wave can be connected directly to the PLC / IPC, the product is easy to maintain, easy to operate.



FEATURE

- Waterproof and dustproof protection class IP68
- Measuring flow rate 0.3 ~ 6.0m / s

APPLICATION

Water Treatment Industry & Drinking water industry
 Chemical manufacturing transport process UF / RO equipment made
 Heat exchange and cooling water system pool circulation system.
 Water for irrigation and water distribution measurement



Diverse body material Industrial-type junction box

ORDERING INFORMATION

KSFS -		AUX. POWER		Main material		O Ring		Sensor Size		Plunger for Cap		Connection	
CODE	AUX. POWER	CODE	Main material	CODE	O Ring material	CODE	Sensor Size	CODE	Plunger for Cap	CODE	Connection		
A	5Vdc	C	CPVC	E	EPDM Synthetic rubber (Standard)	S	Short:127mm	N	Plastic	010	Option:10~150M (010~150)		
B	12~30Vdc	P	PTFE	V	Viton Fluorine Rubber	L	Long:185mm	Y	Stainless steel cap	M12	M12/4PIN Connector		
		S	SUS316L	Under acid & weathering environment recommended Viton fluorine rubber,			When fluid temperature is higher than 80 °C, or pressure is greater than 6 bar, please use stainless steel cap			TBP	Plastic junction box	TBA	Aluminum junction box
										TBS	SUS316 junction box		

SELECTION MOUNT SPECIFICATIONS (Optional extra valuation)

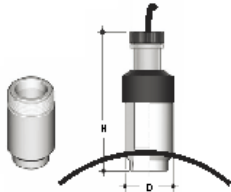
Short pipe welding (P1)

Material / Code Unit:mm

SUS316	CS	PVC	PP	CPVC	PVDF
SW-	BW-	VW-	PW-	CW-	DW-
SIZE	Code	Sensor Size	H	D	
2"~8"	020~080	-S (127mm)	127	43	
10"~16"	100~160	-L (185mm)	185	43	

EX: Chose PVC Material, SIZE "2": Code: VW-020-S

P1



Plastic tee (P3)

Material / Code (Intubation socket) Unit:mm

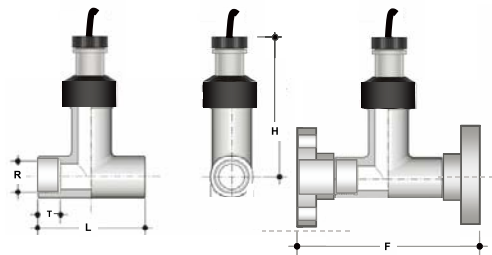
PVC		CPVC		PVC Flanged		CPVC Flanged	
VS-		CS-		VF(I/A)-		CF(I/A)-	
SIZE	Code	Sensor Size	R	T	L	H	F
1/2"	004	-S	21.54	30.58	112.0	130.5	162.2
3/4"	006	-S	26.87	30.58	112.0	130.5	170.2
1"	010	-S	33.66	30.58	96.0	130.5	159.6
1-1/4"	012	-S	42.42	34.75	115.5	131.2	185.7
1-1/2"	015	-S	48.56	37.93	128.0	134.5	204.2
2"	020	-S	60.63	41.10	145.5	136.0	228.3
2-1/2"	025	-S	73.38	47.45	171.0	138.2	266.4
3"	030	-S	89.31	50.63	196.0	147.2	297.8
4"	040	-S	114.76	60.15	237.5	164.3	359.7

EX: Chose (1)CPVC, Intubation socket, SIZE "1" Code: CS-010-S

(2)PVC, ANSI Flanged Coupler, SIZE "3" Code: VFA-030-S

Flange Specification: FJ:JIS 10K & FA: ANSI 150#, Please choose the code when ordering, Insertion port size (R) according to standard ASTM SCH80

P3



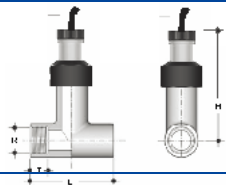
Metal tee (P2)

Material / Code (Ends Female Thread) Unit:mm

SUS316	PT	SUS316	NPT	CS		PT	CS		NPT
PTS-		NTS-		PTC-		NTC-			
SIZE	Code	Sensor Size	R	T	L	H			
1/2"	004	-S	1/2"	19	120	127.3			
3/4"	006	-S	3/4"	19	120	129.9			
1"	010	-S	1"	22.5	120	132.7			
1-1/4"	012	-S	1-1/4"	22.5	120	135.9			
1-1/2"	015	-S	1-1/2"	25	130	138.0			
2"	020	-S	2"	25	150	142.4			

EX: Chose CS Ends Female Thread PT Material, SIZE "2": Code: PTC-020-S

P2

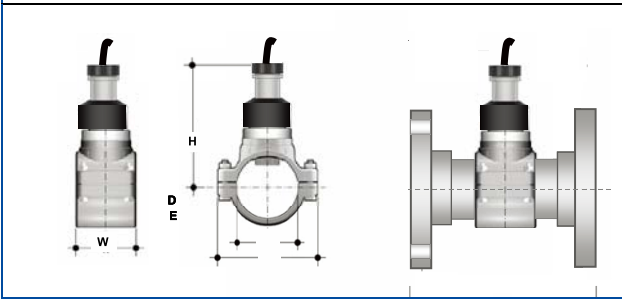


■ Plastic Saddle / flange (P4) (Metallic material, please call us)

Material / Code Unit:mm

PP Plastic Saddle ^{#2}				PVC flange ^{#3}			
PS(V/C/D)-			PF(I/A)-				
SIZE	Code	Sensor Size	D	E	W	H	F
2"	020	-S	63.0	101.0	67.0	136.0	170.0
2-1/2"	025	-S	75.0	116.0	77.0	138.2	190.0
3"	030	-S	90.0	132.0	87.0	147.2	190.0
4"	040	-S	110.0	172.0	101.0	164.3	210.0
5" ^{#1}	050	-L	-	-	-	172.0	250.0
6"	060	-L	160.0	237.0	202.0	202.1	300.0
8"	080	-L	225.0	333.0	230.8	230.8	300.0
10" ^{#1}	100	-L	-	-	-	254.0	330.0
12" ^{#1}	120	-L	-	-	-	273.0	380.0

#1: Short tube produced by welding plus an additional the flange
 #2: Plastic Saddle:PVC(Code:PSV) / CPVC(Code:PSC) / PVDF(Code:PSD)
 #3: flange: FJ:JIS 10K & FA: ANSI 150#, Please choose the code when ordering:
 EX: Chose (1): PVDF Plastic Saddle, SIZE 6": **Code: PSD-060-L**
 (2): JIS flange, SIZE 12": **Code: PFJ-120-L**



■ TECHNICAL SPECIFICATION

Accuracy:	±0.5% F.S. (K Calibrated)@ flow $\geq 0.5\text{m/s}$
Reproducibility:	±0.5% F.S.
Working pressure:	$\leq 10\text{bar}$ (PVC/CPVC), @ 20°C of water $\leq 16\text{bar}$ (CS/SUS), @ 20°C of water
Pressure loss:	< 0.1Mpa
Medium Temp.:	CPVC-Max. 85°C PTFE & SUS316L-Max.100°C
Flow rate range:	0.3~6.0 m/s
Measurement type:	Hall effect devices, two-way measure
Output signal:	NPN Square wave · 5Vp or 12~30V
Length:	3 core wire isolation AWG #22,PVC 10M(Stander)~150M(Option)
Power Supply:	<10 μA @ DC 5V or DC 12~30V Works with PLC/IPC;
Safety Certification	CE ; IEC61000
Working environment	
Operating Temp.:	0~50 °C
Relative humidity:	0~90 %RH
Storage Temp.:	-20~70 °C
Enclosure:	IP68 · Internal epoxy filling
Vibration Testing:	1~800Hz, 3.175g2/Hz

■ Mechanical

Main material:	CPVC、PTFE or SUS316L
Rotor material:	6 rotor: ECTFE fluorine plastic Ceramic High density ceramic
Shaft Bearing Material	
O Ring material:	EPDM or Viton
Plunger for Cap	ABS fireproof material (UL 94V-0) or stainless steel
Material	When the fluid temperature above 80 °C, or use a pressure greater than 6 bar, please Optional stainless steel Plunger for Cap
Electrical Connection:	PVC coated material, Three-wire AWG # 22 wire isolation M12 x 4 Pins Euro connector Engineering plastics / aluminum / SUS316 industrial round junction box
Weight:	About 200g(Not contain weight of cable)
Dimensions:	130mm(L)* $\varnothing 26.70\text{mm}$, Bolt head $\varnothing 38.00\text{mm}$

■ List of diameter and flow

Unit:M³/Hr ; min flow @0.5m/s ; max flow @6.0m/s ; accuracy ±0.5%FS

Caliber	最小~最大流量	管徑	最小~最大流量
1/2"	0.32~3.82	1-1/2"	2.26~27.1
3/4"	0.56~6.78	2"	3.54~42.4
1"	0.88~10.6	2-1/2"	5.98~71.4
1-1/4"	1.44~17.4	3"	9.04~108.6
4"	14.1~169.8	10"	88.4~1060.2
5"	22.1~265.2	12"	127.2~1527.1
6"	31.8~381.6	14"	173.2~2078.4
8"	56.6~678.6	16"	226.1~2714.4

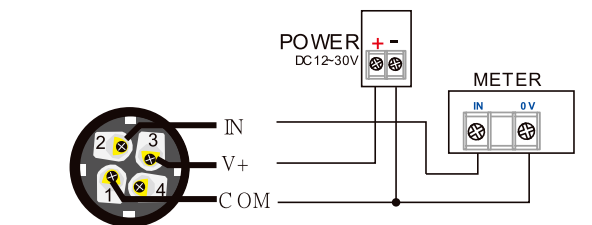
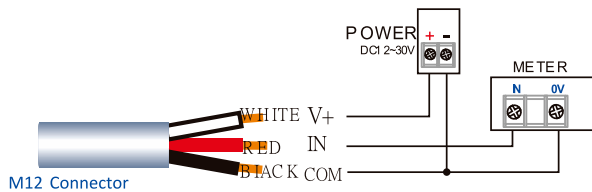
■ K value parameter table

If the actual discrepancy, the actual measurement methods available to correct K value.

Tee T-mount K value table			
Caliber	PVC	PP	SUS
1/2"	273.40	246.37	-
3/4"	164.94	156.67	-
1"	85.08	83.07	80.63
1-1/2"	59.54	58.45	51.29
Saddle mount - plastic pipe K value table			
Caliber	PVC SCH80	南亞 PVC	PP/ PN10
2"	41.21	37.41	36.83
2-1/2"	25.47	19.19	22.85
3"	14.44	12.55	14.11
4"	7.74	7.15	8.83
6"	3.19	3.07	4.50
8"	1.59	1.56	2.19

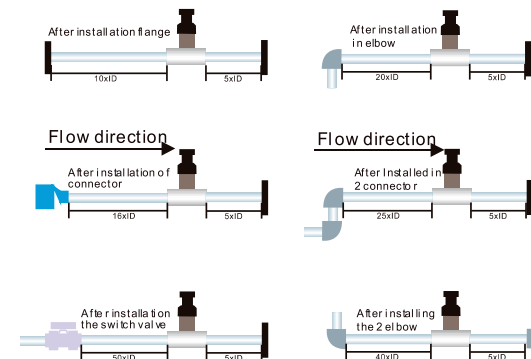
■ DIMENSIONS

Direct outlet



V+ (white): positive input, Power Supply: DC 12 ~ 30V or 5Vdc, IN (red): Signal Input, COM (black): negative signal input and the negative side of the point

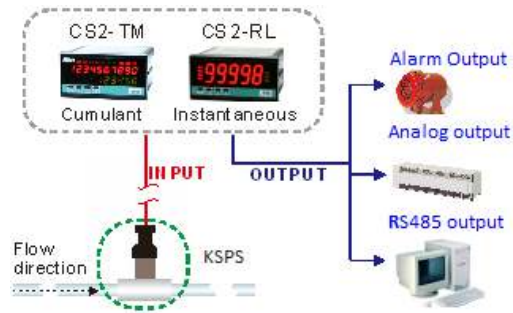
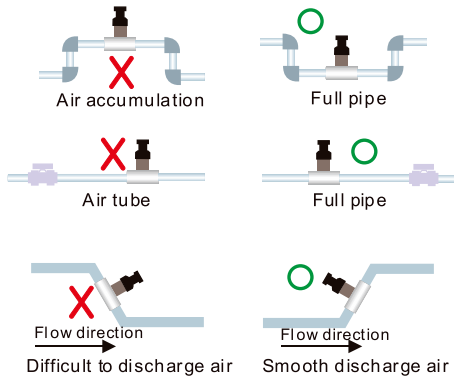
■ Installation diagram



ID: indicates tube diameter, 10XID indicates to be ten times the diameter of the far distance
 Example: 2 "diameter = 5.08 cm, 10XID = 10 * 5.08 = 50.8 cm

Installation Considerations

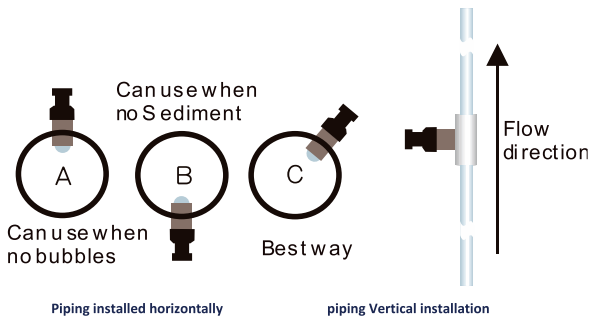
KSFS Paddle Wheel Flow Sensor with professional Meter, CS2-TM(PLUSE), Instantaneous / accumulated value display / control meter CS2-RL, Instantaneous value display / control table



Others not recommended to install position:

- not recommended to install at the outlet of the pump (from below 50xD) susceptible to turbulence and can not detect
- not recommended to install prone to water hammer in the pipeline, likely to cause damage to the rotor
- not recommended to install piping water from top downward, it is easy not full pipe caused the error
- not recommended to install on a reciprocating pneumatic pump system because fluid can not detect fluctuations

Mounting angle



Piping installed horizontally

piping Vertical installation

Horizontal pipeline installation:

- A: Installation no bubbles in the fluid line
- B: Installed in a fluid conduit no precipitate
- C: Generally the best installation angle

Vertical piping installation:

- Can be installed on any angle, but it is recommended by the upward fluid flow (as shown)

Peripheral product and applications

KSPT PRESSURE Transducers

FEATURE

- Measurement of gauge pressure, Compound pressure or absolutely pressure.
- Modularity of electrical and hydraulic connections
- Highly resistant to process conditions
- Low cost & high stability

APPLICATION

pneumatic compressors, HVAC, hydraulic systems, pump monitoring, water treatment and control systems



TECHNICAL DATA

Sensing element:	Ceramic sensor with o-ring packing.
Measurement Range:	Compound pressure: -1 ~ 0 to -1 ~ 5bar Gauge pressure: 0 to 200bar Absolute pressure: 0~1/~2 bar
Overload:	2 x measuring range;
Rupture Pressure:	3 x measuring range
Output Signal:	2 wired: 4~20mA; 3 wired: 0~10V or 0(1)~5V
Accuracy:	Linearity: $\leq \pm 0.5\%$ FS Hysteresis: $\leq \pm 0.2\%$ FS Zero point at voltage output: < 50 mV
Zero thermal drift:	$\leq \pm 0.012\%$ FS/°C
Zero Adjustment:	$\leq 10\%$ of F.S.
Span Adjustment:	$\leq 10\%$ of F.S.
Response Time:	≤ 5 msec
Load Cycle:	≤ 50 Hz

Power

Power Supply:	18 ~ 36 Vdc for 2 wire Loop powered 24 Vdc for 3 wired powered
Maximum Input Current:	≤ 15 mA
Load Impedance:	$\leq 1000 \Omega$
Current Consumption:	≤ 20 mA

Environmental

Operating temperature:	Standard: -10°C ~ 85°C Option: -25°C ~ 150°C
Operating relative humidity:	$\leq 95\%$ non-condensing
Temperature coefficient:	≤ 100 PPM/°C (0~55 °C)
Storage humidity:	0~70% RH (non-condensing)
Enclosure:	IP65 (DIN connector)
Vibration resistance:	1.5 mm (10~55 Hz), 20g

Electrical safety

Dielectric Strength:	AC 2.0KV for 1 min between Output / Metal parts
Insulation:	$\geq 100M$ ohm
EMC:	EN50082-1, EN50082-2 EN50081-1, EN50081-2

Mechanical

Materials of Housing:	Standard: Stainless Steel 304 Option: Stainless Steel 316
------------------------------	--

Materials of Wetted parts:

Ceramic with o-ring packing/ Innox 1.4305
Outside thread: NPT 1/4", 3/8", 1/2";
PT 1/4", 3/8", 1/2"; PF(G) 1/4", 3/8", 1/2"
DIN connector 43650-A
About 280 g

Electrical Connection:

ASSEORY

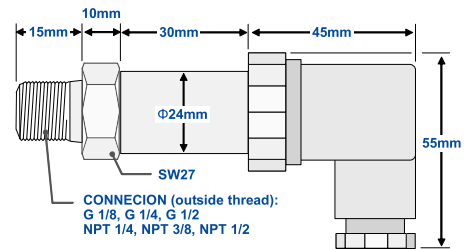
2 WIRED FIELD INDICATOR



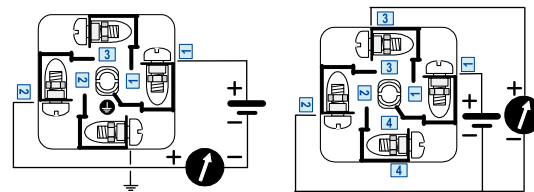
Please refer to the page EP-01 for detail specification.

Display:	0~9999(Programmable)
Alarm Output(option):	2 points; Open collect
Connection:	DIN connector 43650-A
Power Drift:	$\leq 4.5V, 3mA$
FILTER	Model Number: PS FILTER- Please contact with our sales dep.

DIMENSIONS



CONNECTION



2 wired connection

3 wired connection

ORDERING INFORMATION



CODE	WETTED PARTS	CODE	RANGE	CODE	RANGE	CODE	OUTPUT	CODE	CONNECT	CODE	MATERIAL O RING
PT	Ceramics sensor with O-ring packing	001	0~1 Bar	400	0~400 Bar	3	0~5V(3-wired)	N2	1/4"	1	FPM (Fluororubber) (standard)
		002	0~2 Bar	V10	-1~0 Bar	4	0~10V(3-wired)	N3	3/8"		
		006	0~6 Bar	B15	-1~5 Bar	5	1~5V(3-wired)	N4	1/2"		
		010	0~10 Bar	A01	Absolutely 0~1 Bar	D	4~20mA(2-wire)	P2	1/4" PT		
		016	0~16 Bar		Absolutely 0~2 Bar			P3	3/8" PT		
		020	0~20 Bar	A02	Absolutely 0~2 Bar			P4	1/2" PT		
		040	0~40 Bar					G2	1/4" PF		
		100	0~100					G3	3/8" PF		
		250	0~250					G4	1/2" PF		
								O	Specify		

* If the range is over 200bar, It's strong recommend to use diaphragm type(model PU or PD).

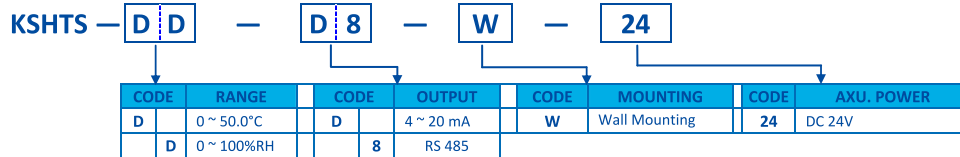
KSHTS HUMIDITY & TEMPERATURE

FEATURE

- Accuracy: Temperature : $\pm 0.3^{\circ}\text{C}$; Humidity : $\pm 2\%$
- Dual display for $0.0\sim 50.0^{\circ}\text{C}$ and $0\sim 100\%\text{RH}$
- RS 485 Modbus RTU mode in standard
- Dual current output for Temperature & Humidity
- Low output ripple
- High stability & low cost
- CE approved



ORDER INFORMATION



SPECIFICATION

Measuring Range	Output	Load
Temperature 0 ~ 50.0	4 ~ 20 mA (4-Wires)	$\leq 500\Omega$
Humidity 0 ~ 100	4 ~ 20 mA (4-Wires)	
	RS 485 Modbus RTU Mode	

Accuracy (at 25 °C):

Temperature: $\leq \pm 0.3^{\circ}\text{C}$ at $25 \pm 20^{\circ}\text{C}$;
 Humidity: $\leq \pm 2\% \text{RH}$ between $10\sim 90\% \text{RH}$
 $\leq \pm 4\% \text{RH}$ at $0\sim 10\%$ and $90\sim 100\%$

Sensing Elements:

Temperature: RTD Pt100 Ω , DIN43760
 Humidity : Thin-film capacitor

Response time:

Temperature: ≤ 10 sec.(still air)
 Humidity: ≤ 4 sec. (still air)

Span adjustment:

Digital compensation

Zero adjustment:

Digital compensation

Display

LCD:

123x123 pixel LCD with backlight
 Temperature reading: $0.0\sim 50.0^{\circ}\text{C}$
 Humidity reading: $0\sim 100\% \text{RH}$
 Modbus Device Group: 1~4
 Modbus Device no.: 01~64 (binary encoding)
 Communication port status: TX/RX

Analogue output(option)

Resolution:

12 bits AD converter

Output ripple:

$\leq 0.25\%$ of F.S.

Response time:

≤ 200 m-sec. (10~90% of input)

Output range:

4~20mA, max load 500 Ω

RS 485 communication

Device No:

1~255, Group (1~4) * Device no(1~64)

Baud Rate:

9600

Parity:

N, 8, 1

Power

Power Supply:

DC 24V $\pm 10\%$

Power consumption:

$\leq 2\text{W}$

Environmental

Operating temperature:

0 ~ 50°C

Operating relative humidity:

0 ~ 100 %RH, non-condensing

Temperature coefficient:

$\leq 0.008\% \text{RH} / ^{\circ}\text{C}$ (Effect at 0%RH)
 $\leq 0.008 / ^{\circ}\text{C}$ (Effect at 28°C)

Storage temperature:

-10~70 °C

Enclosure:

IP30

Electrical safety

EMC:

EN61326

Safety:

EN61010

Mechanical

Dimensions:

120mm(W) x 119mm(H) x 22mm(D)

Housing:

ABS white, fire-protection (UL 94V-0)

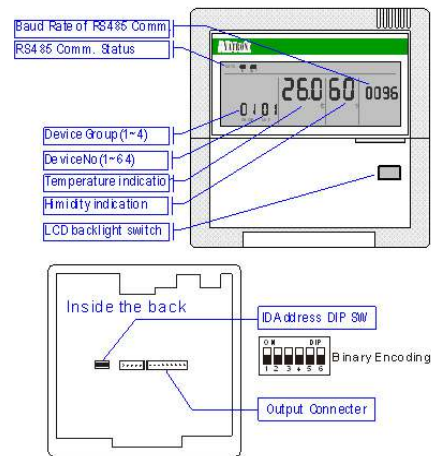
Mounting:

Wall mounting with loose flange

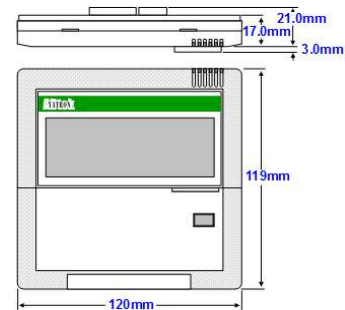
Connection:

9 PIN Plug in connector with wires

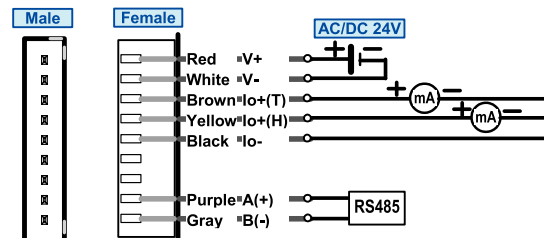
FRONT PANEL



DIMENSIONS



CONNECTION DIAGRAM



KSHTT TEMPERATURE & HUMIDITY TRANSMITTER

KSHTT temp&Humi

■ PRODUCT

KSHTT series, new type of temperature & humidity sensor, with 4~20mA output function · LCD display screen and RS485 communication port. Multiple types to fulfill various needs, selectable temperature or humidity or temperature & humidity output. Buttons within wiring box for field adjustment of output range, response time, inaccuracy correction and communication parameters. For different field condition and space, KSHTT series transmitters are designed in 4 types W(wall mounting), H(Pipe mounting_H), V(Pipe mounting_V) and S(Pipe mounting_S).

■ FEATURES

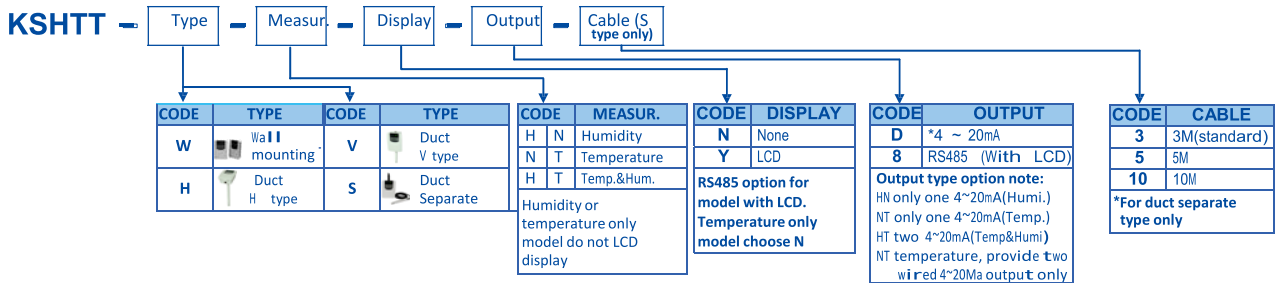
- Two 4-20mA outputs or RS 485(Modbus RTU Mode) communication port.
- Option LCD display function
- 4 selectable temperature range and output 0~50°C · -50~+50°C · 0~100°C or Free range(-30/0~50/~100°C)
- Adjustment of temperature, humidity value and analogue output hi/low limit by button setting.
- Temperature and humidity analogue output response time setting 1~10 second.



■ APPLICATIONS

Building ventilation, computer room, agriculture, laboratory, hospital, product warehouse etc monitoring system.

■ ORDERING INFORMATION

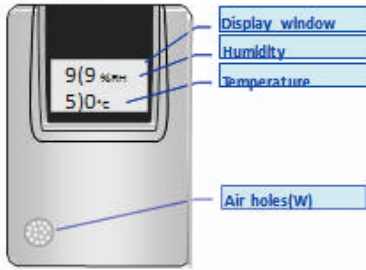


■ SPECIFICATIONS

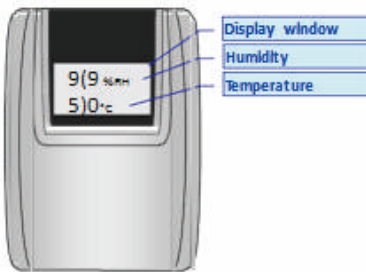
Measure		Baud rate	9600 or 19200 selectable
Range	-20~100°C Selectable 3 range by button or PCB jumper. ; 0.0~99.9%RH	Parity	N,8,1 N,8,2 O,8,1 E,8,1 selectable (8 data bit,1 or 2 stop bit)
Sensing element	SHT11 [®] , Epoxy	Power	
Temp.	band-gap sensor;Drift/annual:< 0.04°C/year;In HTP-X-NT-X-N-X, temperature only,temperature sensor by LM35(National semiconductor),	Power supply	16~30Vdc
Humi.	capacitive sensor element · Drift/annual : < 0.5%RH/year	Consumption	6V A (With LCD display and 2 sets of 4~20mA output)
Accuracy	Temp. ≤±0.5°C @25°C / ≤±1.2°C (0~50°C) ; Refer to characteristic graph	Environment	
Humi.	≤±3%RH(20~80%) / ±4%RH(0~10%,90~100%);Refer to characteristic graph	Temperature	5~50°C
Response	Temp. Condition 30s (Still air) / 5s (Duct air speed 3m/s), 63%, 25°C	Humidity	≤ 100% RH, non condensing
time	Hum. Condition 30s (Still air) / 4s (Duct air speed 3m/s) , 63%, 25°C	Pressure	1 Atmosphere(760mmHg)
Adjustment	Sensing element:Factory only;Transmitter:By RS485 or button adjust	Temp. Coeff.	≤ 100ppm
Display		Storage	-20~+70°C
LCD	Grey · 8.0mm height	Enclosure	IP54 IP65
Display	Setting by button(-20~100°C) within temperature range · select °C / °F ;	Size	
measure	Model with no LCD,adjust range by jumper on PCB 0~50°C, -50~+50°C	Installation	Wall Mounting Duct H Duct V Separate
temperature	0~100°C · Free range(low: -30~0°C · high: ~ +50~+100°C) ;	Type (mm)	
Display Humi.	0.0~99.9%RH	Casing	85(W) x 120(H) x 30(D) 88(W) x 120(H) x 50(D)
Analog output		Tube	X Φ16 x (170+40) Provide flange Φ16 x (80+40) Provide flange
Range	2 Wired 4~20mA*(Temp./Hum.)	Cable	X X X 3 · 5 · 10M
Out put riple	≤±0.5%	Material	ABS Fire proof (UL 94V-0)
Load limit	4~20mA: ≤500Ω ; 0~10V: ≥1.0K ohm	Weight	150g 250g 210g
RS485			
Communication	Modbus RTU mode		
Address	1~255		

FRONT PANEL AND DISPLAY

Wall mounting(W)

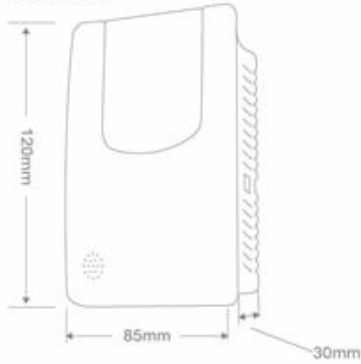


Duct type(H - V)

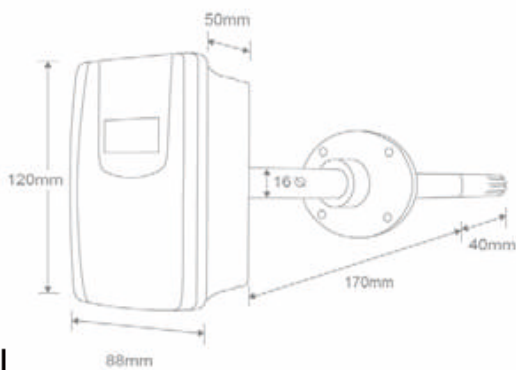


DIMENSION

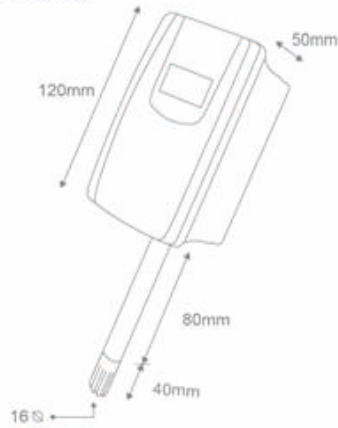
Wall mounting (W)



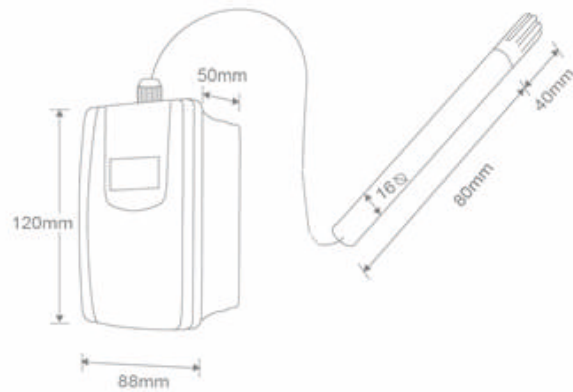
Duct type (H)



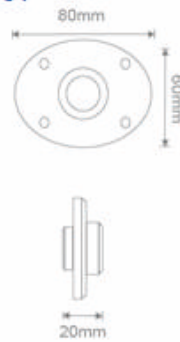
Duct type (V)



Separate(S)

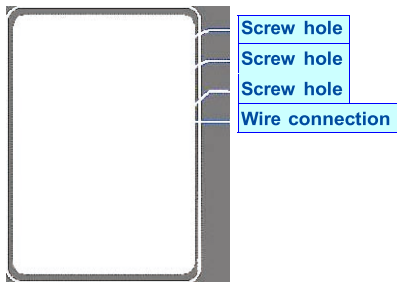
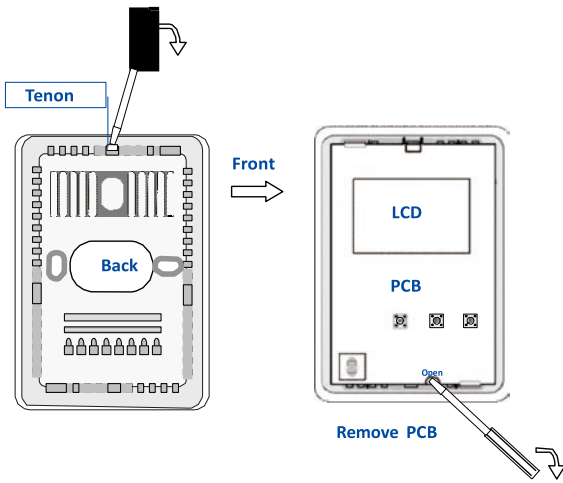


(Flange)

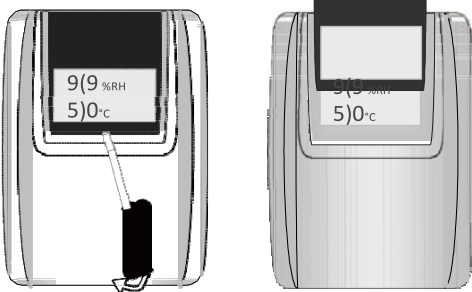


INSTALLATION

Wall mounting (W)



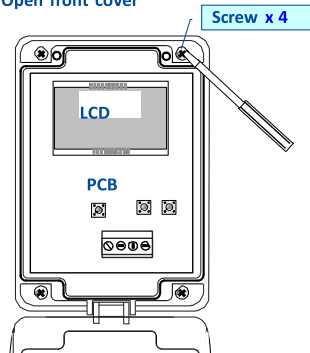
Duct type (H,V and S) Slide protection cover



Loosen screws



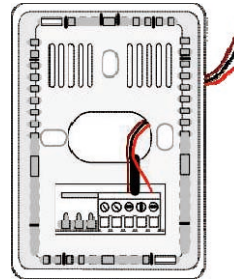
Open front cover



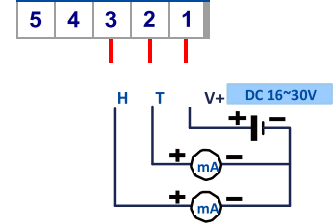
WIRE CONNECTION

Please check power supply voltage and wiring connection before installation. For safety of device, install fuse at power source for protection ⚠ In case of change in wiring, please follow connection diagram on unit.
 Connection wire size 22AWG. Please use isolated twisted pair cable for analogue and RS485 output connection
 Connection terminal: 8A/300Vac, M3.5, 1.2~3.5mm² (22~12AWG)

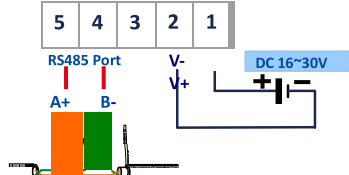
Wall mounting (W) connection



2 wired 4~20mA output

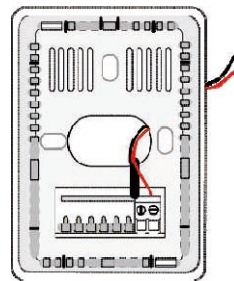


RS485 output connection



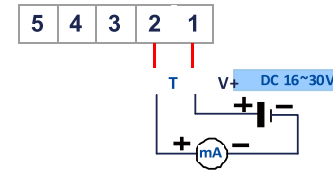
Max. Distance: 1200M
 Terminate Resistor
 (at latest unit):
 120~300ohm/0.25W
 (typical: 150ohm)

Wall mounting (W) -Temperature only



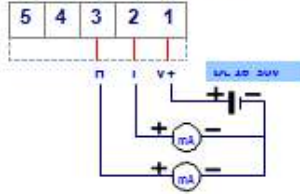
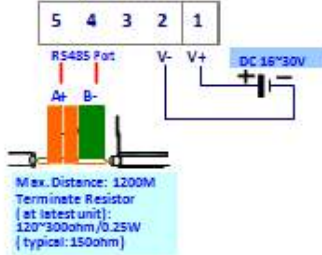
Only 2 wired 4~20mA output

2 wired 4~20mA output connection



Duct type
 (H,V and S)


- Insert wire into terminal to be in contact with connector ;
- European standard terminal DIN PG9 Nylon Cable Gland
 Range of wire diameter : 4.0~8.0mm
 Protection class : IP65

2 wire 4~20mA output connection

RS485 output connection

Display value

When temperature & humidity value is inaccurate, please follow instruction manual to adjust values from PCB button.

Analogue output
Output value

Follow operation manual to set temperature and humidity range by button on PCB for analogue output.

Output response

Follow operation manual to set analogue output response time by buttons on PCB.; setting range 1.0~10.0 sec/time

FUNCTIONS

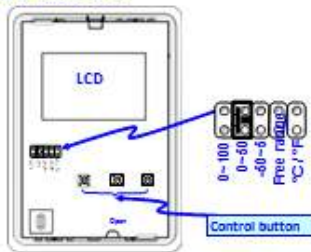
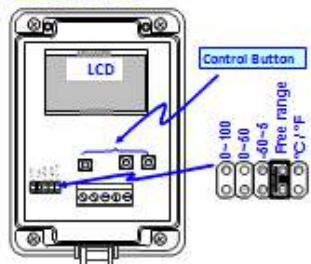
Display function
Display range:

HPT series are designed with 4 temperature range on PCB, change by using jumper, the range are 0~50°C - -50~+50°C - 0~100°C - -30/0~50/100°C. According to difference model, they can be changed in difference range.

Without display type: 0~100, 0~50, -50~50

With display type: 0~100, 0~50, -50~50. Free range(with analogue output: the default of Free range will be -20~80; low range can be set :-30~0, high range can be set : 50~100. with RS485: popt...Epp, range is disabling. User can select range through button.)

Output value according to selected range.

Wall mounting (W)

Duct type(H,V and S)


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